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ARTICLE XXXVII.

CASE OF SCHIRRUS.

By R. S. LEWIS, M.D., of Dubuque, Iowa.

EDITOR CHICAGO MEDICAL EXAMINER,

Dear Sir:—If the following notes of a case, which came under my care, are worthy of a place in your valuable journal, you are at liberty to publish them. It has been a case of considerable interest to me, from its being so rare, and its occurring to a maiden lady. My opinion is, that it is a case of schirrus, from the tumor being hard and lobulated.

Oct. 9th.—Miss M——y, Irish, supposes her age to be 45 or 50 years, called to consult me for what she called falling of the womb; has been more or less troubled for two years past. She had walked five miles, from the country. I advised astringent applications, with the view of introducing a pessary.

Oct. 10th.—She attempted to walk back to the country, but the tumor had forced itself so far into the world that she was obliged to desist, and returned to the city, and called me to visit her. Found her suffering severe pain; and, on examination, I found the uterus protruding six inches beyond the vulva. I called Dr. W. WATSON to see her with me, and, as she had not passed urine for 24 hours, we concluded to draw it off by catheter. In passing the catheter, she strained slightly, and

forced the whole of the uterus into the world. About 9 P.M., Dr. WATSON armed a needle with a double ligature of strong silk twist, and thrust it through the neck of the tumor, tying it as tight as he could draw it on both sides. Some feeling of faintness came on, but soon passed off. The tumor was perfectly insensible, and the patient experienced no pain in passing the ligature through it; and the only inconvenience was its weight, producing a dragging sensation. Has experienced more or less uneasiness from it for two years past, and of late has been down occasionally, but has been easily returned into the vagina. Had no difficulty in passing the finger into a cul-de-sac, which terminated abruptly, after the tumor had come down. The neck of the uterus, where the ligature was passed, did not exceed an inch through.

Oct. 11th.—Had slept ordinarily well during the night; suffered no pain; pulse feeble, 100 per minute. Ordered pul. Dov., 10 grs., every three hours. Called again towards evening. Had some vomiting, evidently the effects of the Dover's powder. Tightened the ligatures. After leaving, her friends removed her about a mile, to another part of the city, against positive orders.

Oct. 12th.—Tightened the ligatures. Feels easy; stomach quiet; passed urine freely, for the first time since the ligature was applied; pulse still feeble, 100 per minute. Ordered port wine. No tenderness over the abdomen. Called again, in the evening, and tightened the ligatures.

Oct. 13th, 8½ A.M.—Found the ligatures loose, and on drawing the one on the right side, it cut through and came away; drew the other tight, and cut away the mass, which measured 9 inches in length, and 5 inches through, in its largest part; lobulated, intensely hard. The patient expressed great satisfaction in being relieved, and turned on her side. Ordered ext. of bark and iron, dessert spoonful, every three hours, in a glass of port wine; also a liberal allowance of beef-tea.

Oct. 14th, 9 A.M.—Passed a comfortable night. Pulse 88 per minute. Ordered pil. blue mass and ext. colocynth, one every four hours, until the bowels are moved. Continue medi-

cine as before; also beef-tea. The ligature had retracted within the vagina. Passes urine freely.

Oct. 15th.—Feels somewhat exhausted from the movements of the bowels. Ordered opi., grs. j, ipecac, grs. j, sub-car. soda, grs. ij, repeat every two hours if necessary, to quiet the bowels. Ligature came away; no discharge from the vagina; appetite improving. Continue medicine and wine.

Oct. 16th.—No particular change, except the skin is moist; feels stronger, sits up for half an hour at a time, without fatigue.

Oct. 17th.—Feels refreshed, from a good night's rest; appears cheerful; pulse 98 per minute. Cleanse the vagina with sol-chlorate potas., ℥j, aqua, ℥vii. Continue medicine and nourishment.

Oct. 18th, 19th, and 20th.—Improving rapidly from day to day; pulse 98 and soft; sits up; moves about her room.

Oct. 21st.—Discharged. Moved into the country, feeling well, except weak.

ARTICLE XXXVIII.

CASE OF POISONING WITH ARSENIOS ACID.

Reported to the Chicago Medical Society, by R. C. HAMILL, M.D.

Published by request of the Society.

June 20th, 1865.—Mrs. H., an Irishwoman, aged 25 years, procured at a drug store, on State street of this city, about one ounce of arsenious acid, mixed it in a teacup nearly full of cold water, stirring it well with her finger, then drank, immediately, the whole of it, with the exception of what remained in the bottom of the cup. She did not wait for it to settle, and, according to her account, there was not more than one or two drachms left in the vessel, so that she must have swallowed six or seven drachms. She coolly informed a neighbor that she had taken poison, left a message for her husband, and resigned herself to her bed to await the issue. I was summoned to her bedside, about 1 o'clock P.M., a half-hour after she had swallowed the

poisonous draught. She complained of burning pain in the stomach, and pain in the head; pulse 50 and soft. I sent her husband to the nearest drug store for the hydrated per-oxide of iron and a bottle of lime-water. A mustard emetic was given immediately, which emptied the stomach in less than five minutes of more than a pint of semi-fluid ingesta and mucus. She had not eaten anything for more than 24 hours. Her husband returned, bringing only the lime-water— $\mathfrak{z}\text{iv}$ were given immediately. The hydrated per-oxide of iron was eventually procured, at Dr. Mahla's drug store, on State street, and about 50 minutes after taking the arsenic, the first portion was given. (The preparation of iron was fresh, and *moist* or *pulpy*.) One tablespoonful was administered every five minutes, until four or five portions were taken, and the residue of five ounces was given, one tablespoonful every ten minutes.

At 4 o'clock P.M., she was stupid, extremities cold and numb, pulse small and thready, increased pain and burning in the cardiac portion of the stomach, pain and tenderness over the entire abdomen, and muscular soreness of the legs. Her stomach bore the iron well until she had taken 5 oz., when she refused to take any more, complaining of its weight in the stomach. Tablespoonful doses of lime-water were given every 30 minutes, until 8 o'clock, when I again saw her. She had had three spasms during the last hour, the first one very severe, the second and third consecutively lighter. I remained a half-hour, during which time she vomited twice, throwing up a little bloody mucus each time. She complained of constriction of the œsophagus, and had a slight spasm, confined to the muscles of the thighs and legs. I ordered infusion of slippery elm bark to be freely drank, and the lime-water to be continued through the night at intervals of one hour—her husband to report to me at 11 P.M., which he did, to the purport that she had not vomited after the first draught of the elm infusion; no more spasms; had slept for almost one hour.

21st.—Tongue and fauces very red; gums swollen and sore; free secretion of saliva, as if salivated; complained of cutting pains through the bowels; pulse fuller and regular. Had slept

three or four hours during the night. No appetite—drank a half cup of black tea for breakfast. Ordered barley-water, with which, and the elm infusion, she was to relieve her thirst, which was urgent, during the day. She took no more medicine, except a solution of sulph. magnesia with morphine, on the 22d, to move the bowels. On the 26th, she was able to attend to her domestic duties.

Foreign Correspondence.

BRIEF NOTES ON THE CHOLERA AT CONSTANTINOPLE, 1865.

CONSTANTINOPLE, Aug. 28th, 1865.

DEAR DOCTOR:—For nearly two months the cholera has raged with great violence in this city. My opportunities for observing the disease have been considerable. It is now four weeks since the disease appeared in that part of the city where I was laboring. Since that time, I have been in constant attendance on cholera patients, having, together with the Rev. Mr. LONG, a Methodist missionary, devoted my whole time to the care of the sick. In the notes I shall make, I will confine myself mainly to what has come under our own observation. A few remarks, by way of introduction, may help you to understand what follows.

1. The khans of Constantinople are large stone buildings, surrounding a court. These buildings vary in size, position, cleanliness, &c., &c. Some of them contain 300 rooms, and will accommodate 3000 to 4000 persons. Others contain only 30 or 40 rooms. The one in which we labored has 175 rooms, and, before the cholera broke out, had a resident population of 2000 persons. These persons are nearly all adult males, who come to Constantinople from the far interior, to do business here. A few of these club together and take a room in a khan. If in good circumstances, three or four will occupy one room; if

poor, sometimes as many as fifteen or twenty persons occupy one room. No one knows how many of these khans there are in the city, but there must be several hundred. I should roughly estimate the whole number of persons resident in such khans at 200,000. It is more rather than less than this number. Many of these rooms are very damp, and the air very bad. An open sewer came into one corner of the khan where we were, and deposited its contents into a large tank or hole which had no outlet. You can imagine what exhalations arose, and still arise, from that place. From this brief description, you can easily see that a densely crowded khan is a rare field for cholera.

2. Mr. LONG and I had a good room at one of these khans, where we met daily, attending the sick, administering medicine, giving advice, and making ourselves generally useful. We generally visited the patients together, consulted in regard to the treatment, in all respects sharing the labor and responsibility.

3. The natives of this country have an idea that a man cannot be considered sick until he is brought *down to his bed*; that he is well as long as he can keep on his feet. Many who have been attacked with cholera diarrhœa have kept on their feet, and sometimes even at their work, until the disease has exhausted their strength and they have come to the borders of the grave.

4. We have attended just 102 cases of those who were in bed when we called. These were bad cases, the symptoms plain; a number of them being in the collapsed state, and past hope, when we began to attend them. Of the 102, 18 have died; all the others have recovered, or are recovering. Besides these, we have given medicine to a large number, probably 350, who have come to our room with cholera symptoms, either diarrhœa or vomiting, or both. Of these, I presume, not 3 per cent have died.

5. The circumstances under which we have labored have been unfavorable, with two exceptions. As these men are away from home, and most of them poor, *proper nursing* has been impossible. I have already mentioned the dampness of the stone

rooms, and the bad air; these men are not cleanly in their persons; they do not change their clothes often; lie down at night in the same clothes they have worn all day; are careless in all their habits, but especially in regard to their diet.

The two favorable exceptions are:—(1.) That the patients have generally *obeyed our directions*. Of those who have died, probably five out of six have not followed our instructions strictly. (2.) Most of our patients have been men in the *prime of life*; they have had a great deal of vital power to resist disease, and to recover after the disease is checked. We have noticed that old persons and persons affected by any other disease, especially if chronic, are pretty sure to die if attacked by cholera.

I will now give some of the symptoms, as we have observed them; then some of the remedies; and, finally, a number of illustrative cases.

Symptoms.

The disease appears to consist of two stages. When first attacked, the patient has a diarrhoea, this causes little or no pain; the discharges are like rice water, or clear water with little white particles in it, like the pulp of a white turnip; the discharges are few or many, according to the violence of the attack; pulse quick; mind active and restless. The diarrhoea is often accompanied by vomiting a yellowish water. When there is both diarrhoea and vomiting, the attack is more severe, and the case more dangerous, than when there is only diarrhoea. If these symptoms are not promptly checked, the strength of the patient will be exhausted in a few hours, and he will pass into the second stage.

In the second stage, there is not much diarrhoea, and but little vomiting; the patient's hands, feet, and limbs become cold; pulse feeble; skin on the fingers shrivelled; color of the hands and feet dark, as if the blood had settled in them; eyes heavy, sunken, and often turned up, showing much of the white of the eye; mind dull and insensible. In almost all cases, in both stages of the disease, there has been more or less fever, sometimes high and violent, sometimes low and heavy. The

patients, almost without exception, have complained of great internal heat, and have *begged for water*. This has been true, even when their limbs have been quite cold. This raging thirst is one of the most marked symptoms of cholera, and one of the most difficult things to control. These are the most general symptoms. Of course there are exceptions, and, in some special cases, there are symptoms not mentioned at all above, generally arising from peculiarities in the individual, but in all cases the attack begins with vomiting or diarrhœa. If these are not checked, the patient will certainly die.

Remedies.

Our main reliance has been upon a mixture composed of equal parts of laudanum, tinct. of rhubarb, and spirits of camphor. The ordinary dose is 30 drops, but when a second dose has been necessary, we have generally doubled it. We have often given 60 drops, or a large teaspoonful, for the first dose, when the case was severe. In two cases, where there was both severe vomiting and diarrhœa, I gave 90 drops the first dose with the best effect; both patients recovered. This medicine is intended especially for the diarrhœa. When it has been difficult to check the vomiting, we have given another mixture, which we call "Mixture No. 2." It is composed of equal parts of tr. opii, tr. capsici, tr. sem. cardamoms, and tr. zingiberis. This "No. 2" has often proved very efficient: dose, 30 to 40 drops, or more, according to circumstances. We have put strong mustard plasters immediately, in almost all cases, on the feet and stomach. When the feet and arms have been cold, we have had them rubbed rapidly with rum or brandy, have applied bottles of hot water or hot bricks, and have taken other means to produce heat and a circulation of the blood in the extremities. In many cases, these external applications have had a good and decided influence. In a few cases, we have stopped the diarrhœa by injections of starch and laudanum. It has been necessary to forbid the use of water *entirely*. Many of the patients who have persisted in the use of water have died; others have been saved with great difficulty. Of course, the patient should eat nothing until the crisis of the disease has passed, and the

patient begins to recover. Here has been one of our greatest troubles; the natives think that unless they take a large supply of food they cannot recover their strength. Several have thus brought on fatal relapses.

Illustrative Cases.

CASE I.—Hagop, an Armenian, from Yozgat. This was the first case I had. Age, 25. Was in the second stage when I first saw him; had been down 24 hours with diarrhœa and vomiting; had taken no medicine; had severe cramps in his legs; hands and feet cold and dark-colored. I gave him large doses of mixture No. 1 and brandy; put two men to rubbing his legs and arms; pulse very low; we checked the vomiting, and the rubbing removed the cramp. I worked over him three hours; left him, towards evening, to go home. Soon after I had gone, his friends called a barber and bled the patient, and he died in a short time. (In this country, barbers bleed and draw teeth.) I felt special interest in this case, as he was an only son. The old father was with him, and begged hard that we should try to save his son's life. The immediate cause of his death was the bleeding.

CASE II.—Marderos, a boy, 14 years old, Armenian; was passing into second stage, or collapse, when I first saw him; had a high fever, great heat internally, but feet and hands soon became cold; begged incessantly for water. Gave mixture No. 1, checked the diarrhœa, put mustard plasters on feet and stomach, rubbed him a great deal with rum; two men worked over him constantly for several hours. Next morning he was better, but had a low fever. He recovered slowly, but is now well.

CASE III.—Sdepan, brother of Marderos. He assisted in the care of M., and became very much exhausted; was taken with violent vomiting and purging, which had continued three hours when I saw him. Gave him a strong dose of No. 1, which he immediately threw up; in a few moments, gave him a second dose, followed by a little brandy; made him lie flat on his back; he retained this dose, which checked the disease. He recovered with very little fever; in three days he was about his room.

CASE IV.—A *hamal*—burden-bearer. (As I shall mention

this class of men often, let me say that they are men of immense physical strength; the loads they sometimes carry on their backs are enormous, weighing from 200 to 600 lbs. Of course they are men of good health. Most of them are Armenians, from Van.) A man of great size and strength, in second stage; hands and feet cold and blue; voice thick; mind dull; his whole body stiff and hard; had taken no medicine; was lying between an open window and an open door, with a strong draft of wind passing over him; his companions were rubbing his feet and hands. I considered him beyond hope. Gave him 60 drops of mixture No. 1, and a large dose of brandy; left brandy to be given him every half-hour during the night. Next morning, went to his room, expecting to find him dead, when he saluted me with a "good morning, Sir!" His companions said that, about midnight, he "opened his eyes, sat up, and asked for a bowl of water to wash his face." He recovered without any relapse, and with very little fever.

CASE V.—Another *hamal*; passing into collapse when I saw him; gave the usual remedies, and put mustard plasters on his feet, arms, and stomach; disease checked, but his thirst was so great that in the night he crawled to a jug of water and drank freely, which brought on a relapse; both the diarrhoea and vomiting returned. The next day he was very low, stupid, dull fever; pulse very feeble. Gave him brandy in large doses; put men to rubbing his limbs with rum. Symptoms checked, but his strength was gone. The third morning he was alive, but his body was covered with little pimples and festers; very feverish; persisted in drinking water during the previous night; had had two discharges. Died on the third night. I feel quite confident that he would have recovered if he had obeyed our directions.

CASE VI.—An Armenian carpenter, old man; while at work on a building was taken with a diarrhoea, but slight; seemed struck down by heat; brought into the khan about 3 P.M. I gave him mixture No. 1. He had a burning fever; great thirst; begged for water; respiration very difficult; had no more diarrhoea, but died the same night, about nine hours after he was first attacked.

CASE VII.—A Bulgarian boy, 17 years old; had been sick when we first saw him, about ten hours; had violent vomiting and purging; was entirely exhausted; eyes turned back and sunken; feet cold; skin shrivelled; his whole appearance indicating that death would follow very soon. Gave him a dose of mixture No. 2, which he immediately threw up, with a great quantity of yellowish water. Gave him another dose, with two teaspoonfuls of brandy; put mustard plasters on feet, arms, and stomach; disease was checked, but typhus followed. After a sickness of thirteen days he was able to leave his room.

CASE VIII.—A Greek tobacconist, 25 years of age; strong, very healthy; attack sudden and violent; had diarrhœa and vomiting. We did not have the exclusive charge of this case; when others had attended him for some time, and there seemed no hope of his recovery, we were called. We applied mustard plasters to his feet, arms, and stomach, gave him mixture No. 1 and some brandy; his feet were cold; applied hot bricks, bottles of hot water, &c., to his limbs, and had them rubbed. He was attacked early in the morning; when we left him, about 5 P.M., there seemed some hope of his recovery, as the discharges had ceased. As we left the room, we met a Jew doctor, who said he must be *bled*. We told him that if he was bled, he would die. After we left, the Jew M.D. bled him, and he died almost immediately.

CASE IX.—A Russian Armenian, an old man, had no one to take care of him; when I found him he had a jug of water by his side, from which he drank freely; he had both vomiting and diarrhœa; both were checked by the usual methods, but he would not desist from drinking water. The next morning he was alive, but the jug of water, which I had removed, was again by his side. His voice was thick and all his symptoms were bad. He was entirely alone, and so he died, before dark, having been sick nearly two days.

CASE X.—Turkish *khoja*, or teacher, 35 years old, strong, in the prime of life; passing into the second stage when called. Mixture No. 1, mustard plasters, brandy, and rubbing saved him. The muscles of his legs were cramped, as if in knots.

A very marked illustration of the influence of medicine—we only gave him medicine once.

CASE XI.—Turk, young man; had been sick twelve hours when we saw him; did not know how many discharges he had had, he had not counted them, thought 15 or 20; pulse low; whole system much depressed and exhausted. The father, in his ignorance, had given him as much water as he wanted, but said, "as soon as he drinks he either vomits or his bowels move." 60 drops of mixture No. 1; mustard plaster; (the old man made a plaster long enough to go clear around the boy's body.) When we returned, after seeing him the first time, and found such a monster plaster ready, we laughed not a little, but told him to clap it on, which he did. The boy recovered.

CASE XII.—An Arab, 25 years old; symptoms very bad; diarrhoea, vomiting; feet becoming cold. We gave him a large dose of No. 1, and a good dose of brandy; ordered the mustard plasters and rubbing. In three days he was about his business.

CASE XIII.—A poor Armenian boy, about 17 years of age; passing into second stage. Dr. PRATT, an experienced missionary physician, saw him; said he thought there was little use in giving him medicine. Ordered a strong dose of No. 2, with brandy in large doses, every twenty minutes, until he began to improve. Put on the mustard. Much to our surprise, he recovered.

I might go on and fill several sheets with such particulars, but have not the time, and perhaps it would add nothing to the value of these notes. I fully intended to give you the particulars of at least 25 cases. All I can now do, is to "close with a few remarks."

1. Pardon the imperfection of what I have written. I know but little about medicine and medical terms. Perhaps there will be nothing new or peculiar in all I have said. I have written only as an *observer* of actual cases of cholera, and not at all as one competent to treat the disease, or to describe it.

2. My observations have convinced me that the operations of the mind have great influence in bringing on, or in keeping off the disease. I have known several instances where fear seems

to have been the principal or exciting cause of the disease, while very few are attacked whose minds are entirely free from fear and anxiety.

3. When the remedies are applied *early* in the first stage of the disease, it can be easily controlled, as a general rule. When not till the patient is in the second or malignant stage, success is very doubtful.

4. From the time the cholera first came here, there has been an impression that rum, brandy, &c., would keep it off; the consequence has been, that about three-fourths of the population went furiously to drinking bad New England rum, and all other kinds of liquor they could lay their hands upon. The effect has undoubtedly been very bad.

5. It is impossible to estimate the number of deaths by cholera, in this city, during the past two months. The published official statements are notoriously false, being far below the truth. One of our friends, a medical man, who is more or less connected with the Government, says he was one day in the office of the Grand Vizier, or Secretary of State, and saw there the true official summary of the whole number of deaths for the previous Monday. This number included all the suburbs of the city, and amounted to 1879, for that day alone. This was some days after the crisis of the pestilence had passed. Many other facts have come to our knowledge to confirm his statement, but I will not mention them now. My impression is, that if we should take 500 as the average number of deaths per day, for 60 days, we should be below, rather than above, the truth. This gives 30,000 as the whole number. Many place it as high as 58,000. The desire of the Government to prevent a panic, has kept them from publishing the true returns. It may be doubted whether the Government itself knows the whole truth.

PARIS, July 15th, 1865.

DEAR DOCTOR:—Since my last letter, Europe has been startled by the appearance of the cholera in Egypt and along the shores of the Mediterranean Sea. It has broken out with great

force at Constantinople, and seems to be spreading. In this city, and in London, there are many cases of cholera, and in the Valle de Grace a case of Asiatic cholera has been reported. Other cases are said to have occurred in the city.

In former visitations, the cholera has progressed regularly from India, along the usual routes of travel. The present epidemic seems to be exceptional in this respect. Its first appearance was among the pilgrims returning from Mecca. Sudden deaths were observed among those who first made their appearance at Cairo and Alexandria, but the first recorded cases occurred, at the latter place on the 10th of May, and at the former on the 26th of the same month.

It is well known, that every faithful Mussulman considers it a sacred duty to make, at least once in his lifetime, a pilgrimage to the holy city, the accomplishment of which gives him a special claim to sanctity. During the closing portion of this pilgrimage, he imposes upon himself the severest privations; walks barefooted and bareheaded, with shaven crown, and with no protection, beneath the burning rays of a tropical sun; religiously abstains from destroying the prolific vermin engendered amid the filth of the motley crowd of Asiatics, Africans, and Europeans, and restricts his diet to the poorest and coarsest fare. From 150,000 to 300,000, after these long fatigues, fastings and exposures, crowded into the smallest possible space, and wrought up to the highest pitch of excitement, join in the religious ceremonies which terminate in the sacrifice of as many sheep as there are worshippers. They may neither eat nor sell the offering, and the vast heap of slaughtered animals, with the thousands of human bodies, fester in the hot sun and breed pestilence and death, bringing with it the martyr's crown to the weary followers of the Prophet.

It is not strange that epidemics should be developed under such circumstances, and especially this year, for I learn that the usual appropriation of \$60,000 to the Governor of Mecca, for the purpose of improving the sanitary condition of the city, has been withheld. The disease continued to increase in Cairo and Alexandria until the waters of the Nile began to rise, and, at last accounts, the mortality was diminishing.

During the last year, the cholera has been more than usually prevalent in India, but has not extended westward, nor has the disease developed among the pilgrims, so far as I can learn, extended eastward. In fact, so far, it seems to be confined to the basin of the Mediterranean Sea. I think it likely that Northern and Western Europe will escape this year, and it is possible, though I think it not probable, that the coming winter may destroy or render inert the producing causes of the pestilence.

Of one thing, however, I am quite certain: Europe is ripe for the development of epidemics. In Russia, during the Spring and early Summer, a disease of a typhoid character has been prevalent. This has been called the Russian plague, but is only a modified form of the fevers of Liverpool and Naples, mentioned in my previous letters. In London and Paris, the same class of diseases are now epidemic; while in Prussia and Central Europe, cerebro-spinal meningitis has prevailed to an alarming extent. There is, therefore, a general tendency to epidemics. The vitality of the great mass of the people seems to be lowered; diarrhoea and dysentery have been more than usually common in all the large cities, and the percentage of mortality from these diseases much above the average. There is, therefore, I think, reason to fear that Northern and Western Europe will suffer from the cholera during the coming year. In fact, the disease already exists in Paris and London. Strict quarantine measures have been instituted, but they have not prevented the fiend from leaping, at one bound, from Ancona to the banks of the Seine, not, it is true, as an epidemic, but presenting, rather, one of those cases of spontaneous generation that have so recently puzzled the French academicians. I have no doubt but that a judicious quarantine is useful, but if, as we have seen, the pestilence has been developed *de novo* amid the filth and wretchedness of 150,000 fanatics on the borders of the Red Sea, I know of no reason why it may not also be produced among the lazzaroni of Naples, or in the dark, dirty, crowded lanes of London and Edinburgh.

The commission charged with the verification of deaths in

Paris, has recently presented to the prefect of the Seine, a memoir on the mortality of the French capital during the twenty-four years ending with 1863. In the beginning of the eighteenth century, the mortality was 1 in 28; in 1840, 1 in 36; and in 1863, 1 in 40. The causes that have effected this improvement are various, but may be traced directly, or indirectly, to the progress of medical science and practice. Public hygiene is taught as an important department in *l'ecole de médecine*, and hygienic laws are promulgated among the people, while the authorities, to a greater extent than formerly, look after the necessities and comforts of the lower classes. Paris, itself, during the last few years, has undergone a great physical change; many of the old, narrow, crooked streets are replaced by wide, airy boulevards; parks and gardens, to the extent of 1-24th part of the whole city, have been laid out and planted with trees; the sewerage has been largely extended; an abundance of pure water supplied; the Seine, itself, kept free from the filth of the city; the poorer classes more abundantly supplied with good, wholesome food; the density of the population materially diminished, by extending the area of the city; private dwellings have been made subject to public inspection, and the administration of public charities is thorough and efficient, securing to the poorest child of this great city, every day if need be, the benefit of the best medical and surgical talent of Paris. The *Hotel Dieu* is about being rebuilt at a cost of not less than \$4,000,000. *La Charite* is also undergoing regeneration and enlargement.

I have been more particularly interested in the wards of GRISOLLE, TROUSEAU, MONERET, and of PIORY at the *Hotel Dieu*, and of BOUCHET, at *l'Hopital des Enfants Malades*, but have seen most of the distinguished physicians and surgeons of the city. VELPEAU is still active, visiting his wards at *La Charite*, and giving clinical instruction every morning. I heard him lecture for an hour to an audience of six persons. His eyesight is still good, and his hand steady, though he operates very slowly. JOBERT (de Lamballe), at the *Hotel Dieu*, scolds and frets, as I presume he always has done, abuses his internes,

and makes himself generally disagreeable. I saw him inject several cases of hydrocele, and one lumbar abscess, with a solution of ammonia. He stated that the inflammation following the injection of ammonia was more plastic than that produced by tr. iodine. I cannot learn that other surgeons here share his opinion. For hydrocele, MAISONNEUVE and DESORMEAUX make an application of solid nit. silver, through a canula, to the internal walls of the sac.

MAISONNEUVE gave me the statistics of his operations for the cure of varicose veins by injections of per-chloride of iron. He reports 365 operations, 364 cures, and one death. In the fatal case, the tr. iodine was used, by mistake, for the per-chloride of iron. A surgeon of large experience, who has had good opportunities to observe his cases, expresses some doubt as to all the others being cures. The operation, if carefully conducted, seems to be safe and is probably as successful as any other.

I have had frequent opportunities of seeing DESORMEAUX use his *endoscope*. He demonstrates the inner walls of the bladder and the mucous membrane of the urethra, throughout its whole extent. I also saw him operate through the instrument for stricture. In chronic inflammations of the prostatic portion, usually so troublesome, the *endoscope* frequently reveals granulations similar to those of granulated eyelids. In such cases, he applies, through the tube, the sulph. of copper in substance.

The Medical Faculty are, as a general rule, opposed to specialties. They say that specialists have never yet established any important principle in pathology or therapeutics, though they may attain great dexterity in certain manipulations. As an illustration of this latter proposition, I may mention the younger DESMARRES. His operations on the eye are certainly wonderful. I have been especially interested in the clinic of FAUVEL, for diseases of the throat and larynx. He is very expert in the use of the laryngoscope, and gave me an opportunity to see some cases of great interest. Among others, a polypus, situated upon one of the vocal chords, and producing

complete aphonia. The removal of the morbid growth was followed by restoration of the voice.

In the Academy of Medicine, at the last meeting, the subject of discussion was thoracentesis, an operation quite frequently performed both in the hospitals and private practice, in this city. M. GUERIN presented a new instrument, intended to prevent the introduction of air into the pleural sac, and also to evacuate, slowly, the contained fluid. At previous meetings of the Academy, the subject of *aphasia* has excited a very general interest. This term has been applied, by TROUSSEAU, to a loss of the power of speech, without lesion of the organs of voice. In one of the wards at the *Hotel Dieu*, I saw a man who could only speak the words "*tout le meme*," on coming in. He was subsequently able to add one or two words, and will now, occasionally, speak a whole sentence, always commencing with the word *tout*. He understands what is said, and seems greatly depressed, sometimes bursting into tears, after fruitless efforts to answer.

J.

Proceedings of Societies.

PROCEEDINGS OF F. R. V. ASSOCIATION.

The Fox River Valley Medical Association met in the Common Council Room, in the City of Aurora, on Monday afternoon, Oct. 2d, 1865.

The President, Dr. Tefft, in the chair.

Present Drs. Tefft, Long, LeBarron, Eddy, Cushing, Winchester, Pieronett, Hance, Howell, Hawley, Hard, Winslow, Jenks and Young.

Minutes of last meeting read and approved.

Dr. D. W. Young proposed Drs. Abner Hard, George Oldmixon, and S. R. Millard, as suitable persons to become members of the Association.

On motion of Dr. Winchester, they were ballotted for and elected.

Dr. Hard came in, paid the admission fee, signed the constitution, and became a member of the Association.

Dr. Wm. LeBarron, of Geneva, proposed the following questions for discussion:—

1st. Are there any forms of continued fever, bilious or otherwise, in which there is no alternations of chills with the fever, which can be broken up by quinine? In other words, is the recurrence of chills, not only in the beginning, but also in the course of the fever, essential to make that kind of fever usually considered of miasmatic origin, in which quinine is a specific remedy?

2d. Has quinine intrinsically any febrifuge properties, or does it ever allay or diminish fever except in those cases of intermittent or remittent fever in which it is known to be a specific remedy?

3d. In case of doubt as to the intermittent or miasmatic nature of a fever, is quinine a harmless medicine to experiment with, or is it liable to produce serious congestion of the brain or lungs, either or both?

A lengthy and interesting discussion ensued, which was participated in by most of the members present. Finally, on motion of Dr. Hawley, of Aurora, these questions were continued for discussion at the next meeting, and Dr. W. LeBarron, of Geneva, appointed to open the discussion by a written address.

Dr. Young, of Aurora, reported a case of diphtheria that he was called to see in consultation, where the disease extended to, and was largely expended upon, the larynx. The formation of membrane had been very rapid, and the expectoration profuse, notwithstanding the patient had been early and energetically treated by a very intelligent and competent practitioner.—The patient died, mostly from suffocation. He desired to know the opinions of the members of the Association, whether the operation of tracheotomy would be of any use in such cases and justifiable.

Dr. Winchester, of Elgin, thought that in such recent and rapid cases the operation would be justifiable, and might be

beneficial, notwithstanding all the cases thus far reported as having been operated on have died. Most of the members thought the operation useless, as experience thus far has taught that all who have been operated on have died.

Dr. Young referred them to several recently reported cases where the operation had been performed, and the patient died. He deemed the operation in this disease useless, and therefore unjustifiable.

On motion of Dr. Eddy, the Association proceeded to the election of officers.

The President appointed Drs. Hawley and LeBarron as tellers.

The following named gentlemen were elected as officers for the ensuing year:—

President, D. W. YOUNG, M.D., of Aurora.

Vice-President, N. P. EDDY, M.D., of Geneva.

Secretary, E. WINCHESTER, M.D., of Elgin.

Treasurer, S. O. LONG, M.D., of Big Rock.

Executive Committee, Drs. S. B. HAWLEY, of Aurora; D. JENKS, of Plano; A. PIERONETT, of Batavia.

The retiring President, Dr. Tefft, then read his valedictory address, in which he named every regular physician who has lived and practised in Kane County since its organization as a county.

On motion of Dr. Winchester, a vote of thanks was tendered to Dr. Tefft for the able manner in which he had discharged the duties of his office for the past year.

On motion of Dr. Hawley, a vote of thanks was tendered the retiring President for his able and interesting address, and Drs. Winslow, of Aurora, and LeBarron of Geneva, were appointed a special committee to assist Dr. Tefft in securing the further history of the regular physicians of the county, and in securing the publication of the same in the county papers.

On motion of Dr. Young, the Junction, in DuPage County, was selected as the next place of meeting.

Dr. Winchester, of Elgin, suggested that the January meet-

ing coming during the holidays, we, as an Association, ought to get up some social entertainment in the evening.

On motion of Dr. Eddy, the Association adjourned to meet at the Junction, on the second Monday afternoon in January, 1866, at 1 o'clock.

DR. D. W. YOUNG, Pres't.

DR. E. WINCHESTER, Sec'y.

Selections.

THE FOOD AND THE TEETH.—OBSERVATIONS ON THE INORGANIC CONSTITUENTS OF THE FOOD OF CHILDREN, AS CONNECTED WITH THE DECAY OF THE TEETH, AND THE PHYSICAL CONSTITUTION OF WOMEN IN AMERICA.

By the late JAMES PAUL, M.D., of Trenton, N.J.

[Concluded from page 634.]

You will observe that the albuminous or nutrient differs from the saccharine and oleaginous, in containing nitrogen, and sulphur and phosphorus, with carbon, hydrogen, and oxygen, while the latter contains only carbon, hydrogen, and oxygen—nitrogen being required in those compounds which give strength and formation to the frame.

Now, the albuminous, or nutritive, being that portion which affords nourishment to the body, contains those constituents required in the first place for the formation and giving strength to the different portions of the body, and, when fully developed, of repairing the general waste continually going on in the system, whether from the usual wear and tear, fractured bones, or the ravages of disease. And the saccharine and oleaginous—the calorific or heat making—to keep up a continual supply of fuel, as it were, that the body may be kept of a regular and proper temperature; for you are, no doubt, aware that there is a continued supply of carbon, or, in more simple language, of charcoal, required to keep up the natural temperature of the body; and what is not required for immediate use is stored away in the form of fat, to be called into action as occasion requires.

We have seen in the analysis of milk, that the fluid contains

butter, cheese, and sugar; consequently, we can understand how an infant can thrive so well upon it—the cheese or caseine* of the milk containing the nitrogenized or nutrient principle, which, together with the earths and salts contained in the milk, goes to form the bones, muscles, and the different tissues of the body—the sugar, which we have seen by the analysis, contains a large quantity of carbon in its composition, going to keep up the temperature of the infant, while the butter, in the nature of fat, is stored away in a healthy infant, filling up every vacant interstice, causing a roundness and plumpness, the pride and joy of the happy parent.

Now let us mark the difference of the babe that has been denied a milk diet, and is doomed, by ignorance, to be fed on starch and sugar. You will recollect that these two substances were composed of carbon, hydrogen, and oxygen only. By a process of digestion which I need not here enter into, such food is converted into sugar, the carbon of which becomes the fuel by which the temperature of the body is kept up—there being no principle in the food to give albumen, there is nothing taken into the stomach upon which the gastric fluid can expend its solvent powers; the infant is, therefore, much troubled with acid eructations, and the stomach becomes weak and irritable. The want of the nutritive constituent of the food, and the earths and salts, etc., necessary and essential for the formation of the bones and teeth, show a lamentable deficiency in the child's development, and there being no fatty matter to be laid up, the body is emaciated, the countenance is ghastly, the flesh and integuments hang soft and flabby over the bones, no absolute disease can be detected, the child is ravenous and hungry, and the unfortunate babe descends to the tomb, a spectre and an object of the most pitiful description. This is no fancy sketch, but one too often met with in the ordinary walks of professional life. And why is it so? Simply because the composition of the human frame, the component parts of our food requisite to produce that frame, and the process of digestion and nutrition are so little understood.

We now advance from infancy to childhood—and this is a

*	Analysis of Caseine from fresh milk.	Albuminous substances found in whey, after coagulation with an acid.
Carbon.....	54.825	54.96
Hydrogen.....	7.153	7.15
Nitrogen.....	15.628	15.89
Oxygen }	22.394	21.73
Sulphur }		0.36

period when the greatest attention is required in supplying nutriment to aid nature in the great work of developing the body. The child is now deprived of the maternal secretion, and dependent on food prepared for its use by the hand of man—perhaps living in a city, and deprived of pure wholesome milk from the cow. And we know there is a vast disproportion in the quality of milk when the cow is country-fed on the natural productions of the farm, and when city-fed on slops and grain, the refuse of the brewery.

It is at this age that the great proportion of bony substance is deposited; those of the extremities are lengthened, become more compact and stronger, and the substance of the teeth is deposited in the cells of gelatinous tissue. How necessary is it, then, that this subject should receive the utmost attention of parents. It has hitherto been too much the custom to leave all this, as belonging entirely to nature—as a thing we had nothing to do with. We have been too much in the habit of considering that nature furnished her own materials, and man had nothing to do with her operation. The potter cannot fashion the bowl without the clay, neither can bone be formed without earth. No, my friends, nature must be supplied with the material, which, although offered in the most incongruous forms, she has the power of decomposing, selecting from, and supplying for the various purposes required; one portion, as we have already stated, to act as fuel in keeping up the temperature; another portion she selects to add to the flesh, the muscle, skin, and different tissues; and the earths which are held in solution, she carries away by vessels adapted for that purpose, and deposits them, atom by atom, until they are so compressed, so strongly compacted together, as to become what we call *solid bone*; and all this so wonderfully wrought, that, as we have seen, small tubes are left in the hard, stony formations both of the bones and of the teeth, that nourishment may be supplied them, holding in solution the material of which they are composed, that natural waste and decay may be replaced, and injuries repaired.

It is to this nutrition, and of the earthy matter of which the bones and teeth are composed, a deficiency which is attended with results so deplorable, that I particularly wish to call your attention.

To what can we attribute the calamity which too often befalls the young? I allude to distorted spines, where the bones composing the spine, instead of forming a column, allowing the body to be erect and dignified, are zigzag in their course, causing one shoulder to bulge out, and the opposite side to bend or

double upon itself. This deformity has been long understood to arise from a deficiency of *lime* in the composition of the bones of the vertebræ, allowing them to fall, press upon, and injure each other, destroying the beauty of the fabric, and the health and comfort of the individual.

Now let us take a glance at the inhabitants of two countries, natives of which are no strangers on this continent. I take them as examples, because the food of the *common people* of those countries, is well known to be of the most common kind. I allude to the natives of Scotland and Ireland—the principal food of one being *oatmeal*, and of the other, potatoes. We have heard a great deal of the famishing poor of those countries, and particularly of the latter—of the misery and wretchedness seen in every hovel; and there cannot be a doubt that a famine walked through the land, when the blight and rot despoiled them of their potato crop, on which, for so long a period, they depended as the great article of food. Now, allowing all this—allowing in the *best seasons*, the chief article of subsistence has been potatoes for breakfast, dinner, and supper; glad indeed many of them to get a little animal food once a week to dinner or even far more seldom—I now ask, what number, in the thousands of emigrants from that country who yearly arrive at our ports, are there that show a constitution weak, fragile, and wanting in physical strength? Many, no doubt, arrive, worn down by disease and suffering, and in the last stage of debility; but let them recover from that state, and the robust frame and healthy constitution will be again developed; and the bones are strong, the teeth undecayed, and the muscular energy only wanting opportunity to display itself;—in fact, when we wish to denote strength in women, we use the familiar phrase, “strong as an Irish women;” and all this from being reared on *potatoes*. But then if we examine the analysis of the potatoes, we shall find contained in 100 parts of dry potatoes,—

Carbon-----	41.1
Hydrogen-----	5.8
Nitrogen, }-----	45.1
Oxygen, }-----	
Ashes-----	5.0

Here we see that potatoes not only contain the nutrient but the earthy constituents.*

* According to a memorial presented to the French minister, on the proportions of nutriment of the means of living, by Dr. Glaser, we find potatoes taking no mean rank.

But we have a stronger and more healthy race yet, from Scotland and the north of Ireland, who are generally descendants of the Scotch, and continue, in a great measure, the same means in rearing the young. Now, a principal, I will not say the principal food of the youth of Scotland, high and low, rich and poor, except in the larger cities, amongst those who class themselves as more refined and more civilized, but who number few in proportion, consists, for breakfast, at least, of oatmeal—that is, porridge and milk; and milk, potatoes, and wheaten, eaten, and peas bread, or *bannocks*, at other times of the day. Animal food amongst the poor is a rarity; a meat dinner on Sunday *only*, being common. Even, among the youth of the better class, butcher's meat, or animal food, is by no means a principal article of subsistence. And I would particularly remark that *Scotch oatmeal* (the oatmeal generally used throughout Scotland) is coarse, and contains much of the bran which invests the oat—containing as it does, a large proportion of the earthy constituents required for the production of bone. Analysis of 100 parts of dried oats gives:—

Carbon-----	50.7
Hydrogen-----	6.4
Oxygen-----	36.7
Nitrogen-----	2.2
Ashes-----	4.6

I may here casually remark, that the advantage to be derived from this wholesome food has not escaped the observation of her majesty, Queen Victoria, who appears in the multiplicity of her public duties, not to lose sight of the equally sacred duties of a mother—and we hear of her son, the heir to the crown of Great Britain, being as fond of his oatmeal porridge as the meanest peasant child in Scotland.

I rather doubt, if parents generally have given to this subject the attention to which it is entitled. I trust, however, that those who have followed me thus far, may be impressed with its importance. We cannot shut our eyes to the complaint which so

NUTRITIVE ELEMENTS.

100 lbs. Wheat Bread contains	30 lbs.	
" Flesh	21 lbs.	
" Fresh beans	80 lbs.	} casein and starch.
" Peas	83 lbs.	
" Lentils	94 lbs.	
" Potatoes	25 lbs.	} albumen, starch, and sugar.
" Carrots	14 lbs.	
" Beets	8 lbs.	} albumen with sugar.

generally prevails, of decayed teeth—and a moment's reflection will call to mind the number of the young and beautiful who are prematurely hurried to the tomb, ere yet the bud has expanded into the full developed flower. Nay, comparing the two countries, the statistics of life and death communicate to us also the important fact, that while the greatest mortality shows itself in England in infancy and childhood, on this side the Atlantic, it is found at a more mature age.

Neither has the tendency of the physical organization of women on this continent to degenerate, escaped the observation of one of our greatest medical philosophers in this country,* who regards this retrogression as a national calamity, and impresses upon his students the importance of the subject, and the propriety of their attention in attempting to arrest it; and he particularly specifies the great object to be gained in the use of bran-bread, made from unbolted flour. On this head, I shall have more to say hereafter.

With these observations, let us now direct our attention to what can be offered in remedy of this evil.

We have already stated, that in no country in the world are children more beautiful or more lovely—healthy in complexion, quick, smart, and intelligent—active, sprightly, and playful in their disposition. Now, in the period from infancy until the child becomes mature—let us, at all events, say until thirteen or fourteen years, and even to a more advanced age—there is a continued growth—a continual deposition of organic and inorganic or earthy particles, which are required for the formation of the bone, teeth, flesh, and every part of the human body. I have shown you that the essential ingredients for these several formations are all found in the milk of the mother; consequently, as long as the infant is deriving nourishment from the mother, she ought to partake of good, wholesome, nourishing food—that the blood, deriving these principles from the food, may be able to supply them in turn to the milk from which it is secreted. So long then, as the child is thus nourished, so long is it safe, and the rudiments or foundation of a robust frame is laid. And if we are to expect, in future life, the stalwart frame of man, or the enduring, firmly-knit, compact, and healthy physical constitution in woman, the organic and inorganic or earthy compounds of which that frame is composed must not be denied—Nature must be supplied, or Nature will fail.

It is not for me to dictate to any parent what shall be the food of his child—it is enough that I point out for his informa-

Dr. Jackson, of Philadelphia.

tion, what may be required to give, what in common language is called "bone and sinew," to their offspring. It is necessary then that the food of children should contain:—

1st. Aliment, having the *calorifacient* or heat-sustaining principle. And this is contained in quite sufficient quantity in the usual food—in milk, wheaten bread, potatoes, arrow-root, Indian corn, (as mush hominy, or corn-bread,) in most vegetable matter, and in sugar.

2d. Aliment containing the *nutrient* principle. And this is contained in animal food—the lean of beast, bird, and fish—in milk, eggs, wheat, rye, potatoes, beans, etc., etc.

And, 3d. Aliment containing the inorganic or earthy constituents—in which depends strength of frame, and from which are formed the bones and teeth of the individual. And these are contained in milk, eggs, animal food, and particularly in wheat, rye, oats, potatoes, etc.*

Of the inorganic constituents contained in wheat, (and the same may be said of the other *cereal* grains,) I have alluded to the benefit to be derived from using bread made of unbolted flour. On this subject, allow me to refer to the difference of flour having much of the bran remaining, and superfine flour, or that in general use throughout this country, and on which Prof. Johnston has made the following curious but practical observations. Examining wheat and flour, as to the amount of

* On this subject, I extract the following from Carpenter's Physiology, page 488:—"These substances are contained, more or less abundantly, in most articles generally used as food; and where they are deficient, the animal suffers in consequence, if they are not supplied in any other way. Thus, common *salt* exists, in no inconsiderable quantity, in the flesh and fluids of animals, in milk, and in eggs; it is not so abundant, however, in plants; and the deficiency is usually supplied to herbivorous animals by some other means. *Phosphorus* exists also in the yolk and white of the egg, and in milk—and it abounds, not only in many animal substances used as food, but also (in the state of phosphate of lime or bone earth) in the seeds of many plants, especially the *grasses*. In smaller quantities, it is found in the ashes of almost every plant. *Sulphur* is derived alike from vegetable and animal substances. It exists in flesh, eggs, and milk: also in the azotized compounds of plants; and (in the form of sulphate of lime) in most of the river and spring water that we drink. *Iron* is found in the yolk of egg, and in milk, as well as in animal flesh; it also exists in small quantities in most vegetable substances used as food by man—such as potatoes, cabbage, peas, cucumbers, mustard, etc. *Lime* is one of the most universally diffused of all mineral bodies; for there are few animal of vegetable substances in which it does not exist. It is most commonly taken in, among the higher animals, combined with phosphoric acid; in this state it exists largely in the seeds of most grasses, and especially in wheat flour. If it were not for their deficiency of *lime*, some of the leguminous seeds (peas) would be more nutritious than wheaten flour; the proportion of azotized matter they contain being greater. A considerable quantity of lime exists, in the state of carbonate and sulphate, in all hard water."

the nutrient or muscular matter, the fat-forming principle, and the bone and saline material, contained in grain in different States, he found that

	Muscular Fat.	Fat Prin.	Bone & Sal.
In 1000 lbs. of whole grain--	156 lbs.	25 lbs.	170 lbs.
“ fine flour-----	130 lbs.	20 lbs.	60 lbs.
“ bran-----	-----	60 lbs.	700 lbs.

Taking the three substances together, according to Professor Johnston, of 1000 lbs., the three substances contain, of the ingredients mentioned,—

	Whole Grain.	Fine Flour.
Of muscular matter-----	156 lbs.	130 lbs.
Of bone material-----	170 lbs.	60 lbs.
Of fat-----	28 lbs.	20 lbs.
	354 lbs.	210 lbs.

Accordingly, the whole grain is one-half more nutritious than fine flour.* It also shows the very great proportion of *bone material*,—that is, *earthy constituents*,—contained in the bran: no less than 700, out of 1000 parts, or a *little more than two-thirds* of the whole. Now, by reference to the same work, we find, in a communication from a Mr. Bentz, the difference in weight of a barrel of flour, without the bran, and when only the outer coating of the wheat is taken off. He says, “The weight of the bran or outer coating would, therefore, in the common superfine flour, constitute the *offal*, weighing only 5½ lbs. to the barrel of flour, whilst the ordinary weight of offal is from 65 to 70 lbs. to each barrel of flour; showing a gain of from 59¼ to 65 lbs. of wheat in every barrel of flour.” Now, if we estimate the earthy constituents to be two-thirds of the offal or bran, we must consider that there is an actual loss of these important constituents, which might be reserved, in every barrel of flour, of 40 lbs.

Again, if we estimate, (according to the average of the consumption of flour to the amount of population, as one barrel to each individual,) that every child shall consume annually only half a barrel of flour, then we find, that by the use of the superfine flour, as commonly used in families, the child is deprived yearly of 20 lbs. of those earthy substances which are required to form the bones and the teeth. When we speak of a child consuming half a barrel of flour annually, it appears a large quantity; but when we reduce the same to a daily allowance,

* Patent Office Report, 1847, p. 116.

we find that it is little more than 4 oz. or $4\frac{1}{2}$ oz.; and every parent must know that this would be a very small amount to limit children. Yet we see how large a quantity of the bony material would be added, if unbolted flour was used instead of the present superfine flour. I may here add, that the oatmeal used in Scotland, already referred to, contains the bran or inorganic constituents, while the oatmeal used in England is deprived of it. Now this is a great loss of the most valuable constituents in only one of the principal articles of the food of children; and if we allude to another article, which is largely used on this continent,—I mean Indian corn,—(and I may also add the fat of meat, both of which, children, if allowed, will partake of very freely,) we shall find that both of these abound more in the calorific, or heat-sustaining principle, and for the deposition of fat, than the nutrient; and that they are quite deficient of the earthy material, *of lime*—that material on which so much depends the proper structure of the teeth. Analysis of Indian corn shows the following composition—as taken from Mr. Salisbury's prize essay—read at the New York Agricultural Society, for 1849:—

Whole kernel.

Starch	50.64
Sugar and Extractive	7.46
Sugar	1.50
Fibre	6.28
Matter separated from Fibre	0.05
Albumen	8.64
Caseine	1.70
Gluten	4.56
Oil	4.00
Dextrine or Gum	4.84
Water	10.22

99.89

Ash of the kernel constituting about two per cent.

Carbonic acid	a trace.
Silicic "	1.450
Sulphuric "	0.206
Phosphoric acid	50.955
Phosphate of Iron	4.355
Lime	0.150
Magnesia	16.580
Potash	8.286
Soda	10.908

Chloride of Soda -----	0.249
Organic acid-----	3.400

 97.000

This is a most elaborate analysis—far more minute than any analysis we have had of any of the articles of food—in fact, more minute than satisfactory; for the analysis of the whole kernel does not exhibit any amount of inorganic constituent; and when the whole was converted into ashes, we find that the *lime* only amounts to *the one-sixth of one part* in a hundred. Now, on inquiry, I find, on the authority of a very intelligent miller of this city, that in grinding corn, the bran, or thin skin of the grain, is detained in forming it into corn-meal; consequently, is deprived of even that portion more particularly containing the earthy constituents. This gentleman in conversation mentioned an important fact, relative to this deficiency of lime in corn. To the best of my recollection, he observed, "This stands to reason; for, ten years ago, all the lower part of Jersey grew excellent corn, but would not grow wheat; but since the introduction of *lime* as a manure, they have raised considerable wheat crops." Now the fact is, it is not the habit or food of this plant, even had *lime* been in the earth; and magnesia and the saline manures are recommended to the agriculturist as best suited for its proper development.

It is generally looked upon as invidious, and one is more likely to incur odium, than to receive credit for saying one word against a food which stands so high in public estimation, and is so universally used over this continent. Yet it must not, for one moment, be supposed that I condemn the use of Indian corn, in its various forms as mush, hominy, bread or pudding, as an article of diet: far from it. But containing, as it does, a large proportion of starch and fatty matter, rather a small proportion of the nutrient principle, and quite a deficiency of the inorganic or earthy constituents, I consider it as valuable, as a light diet, for heat-sustaining purposes only, and therefore a desirable adjunct to *other food*, containing more nutriment and a due proportion of the earthy constituents.

As an example or illustration of the want of the nutrient principle in corn or corn-meal, I may here allude to the effects I have seen in the West Indies; where, in a dearth of the ordinary provisions on which prisoners were fed, corn-meal was substituted; corn-meal and salted herrings, fish, etc., constituting their food. Now the effect was, that all the prisoners lost their natural strength; at the same time they became fat

and bloated, inclining to dropsey; and this was not the effect of incarceration; for the prisoners were engaged in road-making, trimming fences, etc.; consequently, in a healthy and exhilarating employment.

In reference to our domesticated animals, it may be asked, Why is corn so useful, as an article of food, to animals generally—horses, hogs, sheep, etc.? I have already shown that the overplus of the calorific food, after what may be required for sustaining the temperature, it stowed away in the form of fat. Now, if we instance the horse: corn is generally, if not always, given as an adjunct to his more usual food, hay. And we find by analysis, that grass or hay contains not only the nutrient principle, but the inorganic constituents required in the formation of bone, etc.

One hundred parts of dry hay contain—

Carbon-----	45.8
Hydrogen-----	5.0
Oxygen-----	38.7
Nitrogen,*-----	1.5
Ashes,†-----	9.0

100.

Thus, the hay gives to the animal strength in bone and muscle, while the corn supplies additional heat-sustaining properties, and lays by, in the form of fat, the overplus as a reserve. The harder the horse is worked, the more corn he can bear; the great proportion of the carbon being carried off by the lungs, and the hydrogen and oxygen, as water, in exhalation and perspiration. But if the same quantity is given to a horse at rest, it overloads him with fat, which, in his case, accumulates more internally, or around the internal organs, and will, in course of time, induce disease; while in the pig, under similar circumstances, the fat is laid on externally, if I may so speak, giving the rich fat pork of our markets. And here I would again remark, that no farmer would consider it necessary or essential to give corn to a young colt or horse, until required to work; nay, so careful is nature, in appropriating just so much and no more of any constituent that may be required, that the food of the young horse should be more nutritious than heat-sustaining; and that there shall be no superfluity to store away fat, we find by analysis, that the milk of the mare has little or no butter,

* Fifteen pounds of such hay, containing oz. 3.095 of nitrogen.

† These ashes having a good proportion of lime.

in fact only traces of it, in its composition.† What a lesson in the animal economy is here given, and what a practical illustration of the requirements of the young of that and other animals!

Again, it may be contended, that among the beautiful children we see on every hand, there is no want of those who are fat and hearty. It is not *fat* we want—it is bone and muscle—with so much fat only as shall give firmness to the flesh and plumpness to the figure. Fat, although it enters intimately into union with the other component parts of bone and muscle, cannot be transformed either into the inorganic constituents of bone or teeth, or into muscular fibre; these must be contained in the food consumed, in the first place, and thence transferred to the blood.

How necessary, then—how important is—if we expect to give strength and vigor to the constitution, that the food, in the first years of infancy and childhood, when the formative process is going on, should receive some further attention than has hitherto been given to it; and if our youth—if our young females have hitherto been deprived of the necessary constituents for the full development of every portion of the body—can we wonder that a woman should be the delicate and fragile being she is, or that by the decay which assails the teeth in early life, she should be deprived of an ornament of so much value? If this state of things can be altered—if the physical constitution of woman in America can be saved from further degeneracy—a purpose may be effected, of consequence even in a national point of view; for it is to the healthy and vigorous constitution of woman that we must look for a race of hardy, vigorous, and enterprising freemen.

In conclusion I would briefly state, that this is a matter in which professional aid can avail little; it lies at the door, and must be the work of parents generally. It is for them to understand the great value to be attached to the food on which their children subsist—that it shall be wholesome and nutritious, and abounding in earthy compounds so absolutely necessary to their proper development. If the chief articles of food have hitherto consisted of compounds made of superfine flour, corn-meal, and the fat of meat, let there be substituted in their stead, bran-

† ANALYSIS OF MARE'S MILK.

Water	896.3
Butter	Traces.
Caseine	16.2
Sugar of Milk, Extractive Matters, and Fixed Salts	87.5

1000.

bread, milk, eggs, the lean of meat, and potatoes; let more attention be given to the nutrient quality of the food;—let there be no deficiency of those articles containing the earthy material, that the bones and teeth shall not be deficient in those constituents so necessary in their composition and structure; and I should be inclined to hope that the evils which now exist will be lessened, and the physical organization of succeeding generations be equal to that of my nation upon earth.

REPORT ON THE USE OF PRESSURE IN THE TREATMENT OF GONORRHOËAL AND PURULENT OPHTHALMIA.

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Read before the American Ophthalmological Society, June 13th, 1865.

TABULAR STATEMENT of all Cases of Gonorrhœal and Purulent Ophthalmia treated in the Desmarres Eye and Ear Hospital, at Chicago, from Aug. 28, 1864, to January 15, 1865, with results obtained.

No.	Age.	Names.	Affection.	Treatment by Pressure.				Results.			
				With.		Without.		Saved.		Lost.	
				Right.	Left.	Right.	Left.	Right.	Left.	Right.	Left.
1	23	Chapin	Purulent Ophthalmia...	1	1	...	...	1	1	...	...
2	48	Case	"	1	1	...	...	1	1	...	...
3	33	Richards	"	1	1	...	...	1	1	...	...
4	26	Haight	"	...	1	1	...	...	1	1	...
5	43	Vosburgh	"	1	...	...	1	1	...	...	1
6	23	Finn	"	1	...	...	1	1	...	...	1
7	20	Shimming	"	1	...	...	1	1	...	...	1
8	25	Ulrich	"	1	...	...	1	1	...	...	1
9	24	Strong	"	...	...	1	1	1	1	...	...
10	39	Shafer	"	...	...	1	1	...	1	1	...
11	25	Smith	"	...	...	1	1	1	1	...	...
12	17	Doran	"	...	...	1	1	...	...	1	1
13	43	Gibbs	"	...	...	1	1	...	...	1	1
14	34	Ellsworth	Gonorrhœal Ophthalmia	1	1	...	...	1	...	...	1
15	40	Eason	"	1	1	...	...	1	1	...	...
16	20	Mervin	"	...	...	1	1	1	1	...	...

RECAPITULATION.

	No.	Saved.	Lost.
Eyes Treated with Pressure	15	14	1
Eyes Treated without Pressure	17	7	10

The condition of the above cases at the commencement of treatment with pressure was as follows. Results are also given.

CONDITION OF PATIENTS.

No. 1.—Corneæ panniform and ulcerated; chemosis sero-phlegmonous and large; purulent discharge abundant.

Nos. 2 and 3.—Corneal epithelium of both eyes considerably disturbed; chemosis sero-phlegmonous, firm and large; discharge abundant.

RESULTS, &c.

Pressure was used on both eyes in these three cases.

No. 1 recovered in good condition, except nebulous spots at seat of old ulcerations of corneæ, whose panniform condition is fast disappearing and vision improving.

Nos. 2 and 3 recovered in good condition.

CONDITION OF PATIENTS.

No. 4.—Right cornea sloughed and lost; left corneal epithelium so disturbed as to seriously interfere with its transparency; chemosis large and phlegmonous.

No. 5.—Cornea of left eye sloughed and lost; right corneal epithelium considerably disturbed; chemosis phlegmonous, large and firm.

No. 6.—In similar condition.

No. 7.—Left cornea sloughed and lost; right affected with central ulceration and perforation; chemosis phlegmonous and very large; great tumefaction of the lids of both eyes.

No. 8.—Left cornea sloughed and lost; right panniform and ulcerated; chemosis very large, firm and phlegmonous; purulent discharge from all abundant.

RESULTS, &c.

Pressure was employed on left eye of No. 4 and on right eye of Nos. 5, 6, 7, and 8.

Nos. 4, 5, and 6 recovered in good condition; No. 7 with central leucomatous spot, artificial pupil practicable; and No. 8 with cornea cloudy and panniform, but constantly improving.

CONDITION OF PATIENTS.

Nos. 9, 10, and 11.—Severe purulent ophthalmia, with large sero-phlegmonous chemosis, (No. 10 being phlegmonous;) purulent discharge abundant, and great tumefaction of lids.

RESULTS, &c.

No pressure was used in these cases.

No. 9 recovered both eyes in good condition. No. 10 lost left eye from sloughing of cornea, the right cornea recovering, panniform and nebulous, but improving. No. 11 recovered

with synechia anterior of each eye, from perforation of the corneæ.

CONDITION OF PATIENTS.

Nos. 12 and 13.—Severe purulent ophthalmia, accompanied by considerable disturbance of corneal epithelium of both eyes and large sero-phlegmonous chemosis; purulent discharge very abundant; lids greatly tumefied.

RESULTS, &c.

No pressure used, and both eyes lost in each case from sloughing of the corneæ.

CONDITION OF PATIENT.

No. 14.—Cornea of left eye largely infiltrated in its deep "laminæ;" very large and firm chemosis; lids largely tumefied and eye scarcely influenced by recti-muscles; discharge of gonorrhœal pus from both eyes very profuse. Cornea of right eye slightly infiltrated in superficial "laminæ;" chemosis large, phlegmonous and firm; lids much swollen; patient had discharge from the urethra.

RESULTS, &c.

Pressure employed on both eyes. Cornea left eye recovered, opaque from ulceration and perforation; cornea of right eye slightly cloudy, but vision continually improving.

CONDITION OF PATIENT.

No. 15.—Epithelium of both corneæ considerably disturbed; chemosis large, firm and phlegmonous, great tumefaction of lids, and abundant gonorrhœal discharge.

RESULTS, &c.

Pressure applied to both eyes, which recovered in good condition.

CONDITION OF PATIENT.

No. 16.—Corneal epithelium slightly disturbed; large phlegmonous chemosis; great tumefaction of lids, and abundant gonorrhœal discharge from both eyes.

RESULTS, &c.

No pressure used. Recovered in good condition.

From the preceding table and subsequent remarks, it appears that thirteen patients with purulent ophthalmia were treated. In three cases both eyes with pressure, and both eyes in each case recovered.

In five cases an eye only of each patient was treated with

pressure, and the other eye without. All the former were saved, and all the latter lost.

In five cases not treated with pressure, one patient recovered both eyes in good condition; one with synechia anterior of each eye; one losing the right and saving the left eye, and two losing both eyes.

Three patients affected with gonorrhœal ophthalmia were also treated.

In two cases both eyes were treated with pressure. One patient recovered both eyes, and one lost the left and saved the right eye.

In one case in which no pressure was used both eyes were saved.

The above comprises all cases of these types treated in the hospital from August 26th, 1864, to January 15th, 1865, which I have been particular to describe in order to show the nature of these affections as they manifested themselves, and the relative value of the application of pressure in their treatment.

Those of purulent ophthalmia exhibited an unusual degree of malignity; especially in tendency to destruction of the cornea by infiltration or ulceration, and sloughing "*couche sur couche*."

Some oculists have suggested, what occurred to me at the time, that many of them were diphtheritic, but I am not satisfied such was the case. At all events, the indications of such disease were as well marked in those treated with pressure as in the others. The cases of gonorrhœal ophthalmia presented nothing unusual beyond what has been described above.

I have been careful and explicit in regard to details, on account of the marked difference in the results obtained with and without pressure in the treatment, which, in all other respects, was the same; and the more so, as in five cases circumstances placed it in my power to witness the difference of treatment on the same individuals.

This became possible from the fact of my entire want of knowledge of the use of pressure in such cases, until circumstances forced me to devise some method of staying the ravages of disease over which I could obtain, by all known means, but little control; and it was not until ten eyes out of twenty-four had been lost, that the idea suggested itself to me, which, like many others, was at once carefully and prudently acted upon.

Twelve hours seemed to justify the means adopted, and after twenty-four hours the change in the left eye of case No. 4, the only one at first attempted, was so decisive as to warrant the experiment on a more extended scale.

The results are given in the table.

What I mean by the use of pressure in the treatment of such cases, is not the application of lint, wet or dry, over the lids with moderate compression, but a *firm, hard, continued pressure upon all parts of the contents of the orbit, especially the anterior.* This I effect in the following manner:—

The lids being closed, the orbit is to be packed, as it were, by means of charpie, or picked lint, (scraped lint or cotton wool is not so serviceable,) in such a manner that all parts about the eye, within the orbit, the anterior hemisphere of the globe, and especially the conjunctiva, shall be acted on.

Care must be taken to fill the grand angle, and to have the charpie evenly and regularly disposed *about* as well as over the globe.

Quite a large bunch should be used for each eye, not only to ensure evenness of pressure, but to absorb the purulent discharge. This being done, compression is made by means of a bandage, or better, a firm elastic band of rubber braid, not less than two inches in width, passing around the head. It should be slowly and regularly increased until the pain, if any there be, in the parts affected, is greatly diminished or controlled, if practicable.

In other words, pressure is to be applied to the eye and surrounding parts within the margin of the orbit to a degree sufficient to so control the circulation as to prevent the destructive tendency of the disease, but not to interfere with proper nutrition. This must, of course, vary with the peculiarities of each case.

But the principle of employing, as constantly as possible, firm, hard, even and continued pressure from the *earliest moment practicable* until the *close of all acute symptoms*, is not to be lost sight of for a moment. The anatomy of the orbit, the mechanism of the lids, and the cushion of adipose tissue posterior to the globe, render this not only possible, but easy.

I have in no instance resorted to it in purulent or gonorrhoeal affections of the eye during the acute stages, even after the organ has been irretrievably lost, without greatly diminishing the discharge in a short time, and very materially adding to the patient's comfort in reducing the pain, and modifying subsequent and present staphyloma, as occurred in cases numbered 4, 5, 6, 7, 8, and 12.

While the purulent discharge is abundant, the dressing should be renewed twice during every twenty-four hours. Dry charpie is to be preferred, though moist will answer; yet it is not so elastic.

That pressure will have a potent influence in diminishing the discharge, reducing the tumefaction of the lids and the chemosis, modifying extravasation and exudation, arresting and inducing infiltration of the cornea to become resolved, is now a clinical fact.

The rationale of such action is certainly as simple as the means employed to produce it.

The influence of the virus (be it what it may) induces an extraordinary flow of blood to the affected parts, and often with great rapidity.

Their arterial circulation is taxed to the utmost, and the venous also; while the capillary connecting them is inadequate to the demand imposed upon it, even when distended to its utmost.

Hence the results which unhappily too frequently follow. Compression of the affected parts diminishes the flow of blood into them, so acts upon the capillaries as to prevent their enlargement, stimulating them to perform their functions, besides producing partial anæsthesia, and controlling or modifying the pain.

Having dwelt sufficiently, I think, upon the uses of pressure in these cases, I now propose to allude to the treatment I have found in other respects most beneficial. Before doing so, a division of cases will be desirable, to illustrate my reasons for adopting certain means.

1st. Those cases in which pain, swelling, heat, redness, and phlegmonous or phlegmono-serous chemosis are decided and well-marked, and which, usually occurring in patients of full habit, or having that condition favorable to the formation of the so-called "plastic lymph," may be called Sthenic.

2d. Those characterized by "serous puffiness" of the lids, serous or sero-phlegmonous, chemosis, little pain, discharge thin, and great tendency to infiltration on the part of the cornea—conditions which usually occur with persons whose systems have been reduced by scurvy, typhoid disease, chronic diarrhoea, &c.—and which may be termed Asthenic.

Before proceeding to detail the medical, I must allude to certain surgical means, frequently found necessary. It often occurs that the cornea becomes anæsthetized, so much so that the patient feels very imperceptibly the contact of a foreign body—as the point of a small roll of twisted paper, or a small camel's hair brush—and the pupil cannot be influenced by atropia, or only partially so, though *no* adhesions exist between the iris and the capsule.

I have found infiltration of the cornea to follow very closely upon such complications. Deep scarifications, circular or radiated, of the chemosis, or cups to the temple, have, in my hands, been very unsatisfactory in removing or preventing such conditions. No better results seem to follow paracentesis of the anterior chamber, "repeated" or otherwise. Unless largely infiltrated, I have frequently succeeded in saving the cornea in such cases by means of Hancock's operation of division of the "ciliary ring." Besides its preventing infiltration and sloughing of that important membrane, the patient will suffer much less pain during the continuance of acute symptoms. Unless the cornea is in an anæsthetized condition, is beginning to be infiltrated, or shows symptoms of sloughing and ulcerating, such an operation should not be resorted to.

I have frequently found the indications for this operation, as mentioned above, to exist with other affections of the eye, and have relieved them in the same manner; but the subject would, of itself, form an extensive article, and I shall therefore not dwell longer upon it here, beyond remarking that Hancock's operation in relieving such symptoms and conditions, cannot be relied upon to take the place of pressure; neither will the latter, under similar circumstances, relieve the necessity of dividing the "ciliary ring."

The utility of scarifications, deep, circular or radiated, of the chemosis is too well known to be dwelt upon here.

For local application I rely mainly upon bromide of ammonium, atropia, and nitrate of silver. In sthenic cases I prefer the use of bromide of ammonium dissolved in glycerine—forty to sixty grains to an ounce of pure glycerine—which is applied twice daily to the conjunctiva, ocular and palpebral, by means of a camel's hair brush.* It may be employed oftener in some cases, but this will be found, as a general rule, sufficient. Under its influence purulent, and especially gonorrhœal ophthalmia, appears to become rapidly modified, as I have frequently had occasion to demonstrate. The addition of ten grains of tannin to one ounce of the solution adds somewhat to its efficacy, but this is not indispensable.

For asthenic cases the nitrate of silver is most serviceable. I prefer to apply it gently to the mucous membrane of the lids,

* The following will be found serviceable for gonorrhœa:—

Bromide of ammonium,-----	dr. ss.—dr. j.
Tannin, -----	dr. ij
Aqua, -----	oz. ij.—Misco.

Sig.—One half ounce to be injected *pro re nata*.

neutralizing any excess of the salt by proper means. Blood may or not be taken from the lids, the chemosis or the temple, after the use of bromide of ammonium or nitrate of silver; but this must depend on the size of the chemosis and state of the patient. Atropia will be required to dilate and so maintain the pupils.

For general treatment in sthenic cases I prefer muriate of ammonia in alterative doses, from three to five grains every one or two hours. Asthenic cases are benefitted by muriated tincture of iron, five drops every two hours or oftener, if the patient will bear it. Permanganate of potassa is also useful, in $\frac{1}{4}$ grain doses, every two or three hours. But it is evident that all general means must be adapted to the existing condition of the patient. The treatment for purulent and gonorrhœal ophthalmia may, therefore, be summed up as follows:—

1st. If anæsthesia of the cornea exists, or it is infiltrating, and especially if the pupil will not yield to the influence of atropia, Hancock's operation of division of the "ciliary ring" is indicated, care being taken to divide all its fibres from the insertion of the iris to its posterior limit.

2d. Application of a solution of bromide of ammonium, (40 to 60 grs. to 3j. pure glycerine,*) or nitrate of silver to conjunctiva; the former to all parts of the conjunctiva, and the latter to that covering the cartilage of the lids only.

3d. Scarification of the lids and deep incisions into the chemosis, if required, removing the blood with tepid water so long as it continues to flow.

4th. Atropia in solution (iv. grs.—3j.) sufficient to dilate the pupil.

5th. Application of firm, hard, continued pressure, as soon as practicable, and continued to the close of acute symptoms.

6th. Remove the dressings twice during every twenty-four hours, until the purulent discharge ceases.

7th. Two applications daily of bromide of ammonium or one of nitrate of silver will be found sufficient. Atropia may be used twice daily or oftener, but care should be taken not to continue its employ beyond *producing and maintaining moderate dilatation of the pupil*.

8th. A constitutional treatment adapted to the condition of the patient.

It is evident that no single remedy or means should be exclusively relied on in the treatment of purulent or gonorrhœal ophthalmia; but each case, and even each eye, must be managed

* Glycerine perfectly pure should be used.

in accordance with its existing conditions, and the varying symptoms promptly met by appropriate means. In this way we shall be justified in prognosticating favorable results in most cases.

In closing, it is sincerely hoped the special principle of treatment so prominently set forth in this article, as well as all others having anything unusual of application or otherwise will be rigidly tested, and the results made known to the profession.

ON DIPHTHERIA.

By EDWARD HEADLAM GREENHOW, M.D., F.R.S.C.P.

Assistant-Physician to the Middlesex Hospital, &c.

GENTLEMEN,—I propose to bring before you the subject of Diphtheria, and to take, as the basis of my lecture, two cases which have recently been in the hospital, and which were characteristic examples of the two principal varieties of this formidable complaint—namely, of that form in which the urgency of the case is due to the local manifestations of the disease, and of that other form in which the danger arises from the general constitutional affection. The former of these is especially characterized by the existence of symptoms of apnoea, and the pressing danger is caused by the more or less complete occlusion of the air-passages by the membraniform exudation from which the disease derives its name of diphtheria. The latter, on the other hand, is characterized by the predominance of symptoms of asthenia, caused by the intensity of the general disease, and the danger to be apprehended is the gradual exhaustion of the vital powers. You should, however, fully understand, that although these two forms of diphtheria are so diverse in their more salient characters, and in the kinds of danger which attend them, there is yet no doubt of their being, as I have said, only varieties of one and the same disease, for they not only occur constantly during the same epidemic, but very often also in the same household at or about the same time. I have seen many examples of this, and one, which occurred only a few months ago, was especially striking, on account of the severity of both forms, causing death rapidly in both cases. I was called to see a young gentleman, aged fifteen, who had come home from school, I believe, with the complaint, and was suffering from the most urgent laryngeal symptoms, of which,

in fact, he died the same evening, almost immediately after the operation of tracheotomy. Four days afterwards, his sister, aged eight years, was taken ill with diphtheria of the other, the asthenic, form, which also ran an unusually rapid course, and proved fatal on the fifth day of her illness, without the super-vention of any laryngeal symptoms. Another proof of the identity of the disease in the two different forms is, that although, in many cases, their separate characters are as sharply marked as in my description above, yet other cases occur, side by side with them, which partake more or less of the characters of both forms. I say more or less, because, in fact, one of the two classes of symptoms does usually predominate.

Although the two varieties of diphtheria to which I propose directing your attention to-day, are the most important, I must remind you that they are by no means the only forms of this disease. In every epidemic there are many cases in which neither are the air-passages involved, nor are there any urgent symptoms of general constitutional affection. Many of these would, perhaps, at another time, be regarded merely as cases of common inflammatory sore throat; but, occurring as they do at the same time, and frequently in the same household with characteristic cases of diphtheria, we cannot but refer them to the same category. Several of you saw, the autumn before last, a rather severe case of diphtheria, which came from a house in the vicinity of the hospital in which sore-throat had previously been prevalent. The lad, aged sixteen, was a shoemaker's apprentice, and slept in the same room with three other boys. The family consisted of eight or nine persons, five of whom, including the three fellow-apprentices, had been under my care as out-patients in quick succession during the preceding fortnight, for sore-throat of varying intensity, but unaccompanied by exudation. Lastly, but still forming a part of the same epidemic—if I may be allowed to use the term to so limited an outbreak of disease,—this lad presented himself, with symptoms of so great prostration that we were compelled to take him into the hospital. His fauces were coated on both sides with the characteristic false membrane, and, although he made a good recovery, his illness was very severe. Albumen was found in his urine on the day after his admission, and he only regained health and strength after a prolonged and tedious convalescence. Again, cases characterized, it is true, by more or less diphtheritic exudation in the fauces, but unattended by any urgent symptoms, form a large proportion of every epidemic. Sometimes it even happens that almost all the cases in particular

epidemics are of this mild kind. Such cases usually recover under any rational mode of treatment, and it is the consequent great apparent success in treating them which has sometimes led even honest and worthy practitioners to promulgate as a specific for diphtheria some medicine with which they have treated large numbers of cases; the truth being, that by far the greater proportion of these cases required only common care, and would probably have recovered without any medical treatment at all. But although these mild cases so often do well with any or no particular medicine, I must not dismiss them without a word of caution to you, on the one hand against overtreating them, and, on the other, against neglecting them. I have seen serious mischief ensue from what I must term meddling treatment of such cases, especially when in the form of local applications; and yet even the mildest case requires careful watching, because, either by the invasion of the air-passages or by the accession of constitutional symptoms, a case which in the first stages appeared of the mildest kind may subsequently assume a most serious form.

With these preliminary observations, and begging you to bear in mind that I can only bring a small section of my subject, so to speak, before you to-day, I proceed to consider the first of the two grave forms of diphtheria which I have described, as it was exemplified in the more recent of our two hospital cases.

Mary Ann M., aged eleven years, was admitted into Northumberland ward on the 24th of April, under the care of my colleague, Dr. Thompson. She had been ailing with cold for about a week, and had sore-throat from the first. Two days before admission she had commenced coughing, and her voice had become hoarse; but, notwithstanding her indisposition, she had continued able to play about with her companions as usual in the open air, until the afternoon of Sunday, April 23d, when dyspnoea came on more decidedly, the cough and hoarseness increased, and she became so ill that, on the following morning, her mother procured her admission into the hospital. At the time of her admission her breathing was difficult, labored, and stridulous, and she spoke in a faint, husky voice. Her face was flushed, and the expression of her countenance anxious. Her skin was hot, pulse about 140, respirations about 24 in a minute. Mr. Waymouth, the clinical assistant, under whose observation she first came, states that at the time of her admission there was a small patch of false membrane on the fauces; but when I saw her, two or three hours later, this had disap-

peared. The case seemed so urgent that Dr. Thompson requested his colleagues, including myself, to see the patient, for the purpose of considering the propriety of performing the operation of tracheotomy. I found both tonsils enlarged, somewhat ragged-looking and reddened; the pillars of the fauces were also a dusky-red color, and the glands at the angles of the jaw, especially those on the right side, were slightly enlarged. The tongue was moist, coated with a white fur. The urine was normal in appearance, and contained no albumen. On examining the anterior part of the chest, I found a deficiency of resonance in the left infraclavicular region, and the respiration on both sides of the chest sibilant, with slight rhonchus in the upper part of the left lung. I was informed that there was dulness on percussion over the greater part of the left side of the thorax posteriorly, but the child was so ill that I did not attempt to verify this fact for myself. Immediately after the consultation tracheotomy was performed by Mr. Moore, and I shall presently state to you what were my own views of the case, and the grounds on which I advocated a decision in favor of operating. From two and a-half to three ounces of blood were lost during the operation, and the pulse at once fell to 128, but shortly became exceedingly feeble. The respirations became comparatively tranquil, and the child fell into a quick sleep. At eleven P.M., the pulse was 140, the respirations 34; the patient had slept well at intervals, and had partaken freely of the strong beef-tea and brandy ordered for her. On the 25th, it was reported that she had passed a good night, and had taken abundance of nourishment. She was perfectly calm, her pulse from 130 to 140; but the respirations, though unembarrassed, were very frequent, being nearly 50 in a minute. The breathing was found to be tubular, and the percussion resonance dull over the whole of the left side of the thorax posteriorly; the respiration over the right scapula was also slightly bronchial; the deficiency of resonance and bronchial breathing below the left clavicle remained as before the operation. Throughout the day and night she continued stationary, coughing a good deal, but expectorating freely, until early dawn on the morning of the 28th, when she became restless, and began to have difficulty in rising the expectoration. During the day her breathing became more and more embarrassed, and she gradually sank, and died at half-past four P.M., about 48 hours after the operation.

At the *post mortem* examination, a shallow, ragged ulcer was found on the surface of each tonsil, but both throat and fauces were free from exudation. A small patch of false membrane

was lying loose on the under surface of the epiglottis, and the larynx and also the trachea, for the space of an inch and three-quarters downwards, were almost entirely lined with a tough, false membrane of about the thickness of kid leather, for the most part lying loosely on the mucous surface, but here and there so firmly attached as to require much force to tear it away. The incision made by the operation had passed directly through this membrane. The larynx, trachea, and bronchi contained a large quantity of tenacious, muco-purulent secretion. The mucous membrane of the larynx and trachea was generally somewhat reddened, and presented distinct patches of a still deeper redness. On tracing the left bronchus downwards from its origin, the smaller tubes were found to be inflamed and filled with thick mucus. The upper lobe of the left lung was collapsed, and the posterior part of the lower lobe was dark-colored and much congested. The right lung was also slightly congested, but otherwise appeared to be normal. The rest of the viscera were healthy.

I have spoken of this case as illustrating one of the forms of diphtheria, because I regard it as having really been a case of that disease, and not of ordinary croup; I am led to this conclusion by the fact that sore-throat, although of a mild kind, had preceded the laryngeal symptoms for some days, and still existed at the time of the patient's admission to the hospital. This accords with the ordinary history of diphtheria affecting the air-passages; it commences in the fauces, and usually, after a shorter or longer interval, creeps downwards into the larynx and trachea. The interval between the commencement of the illness and the accession of laryngeal symptoms may indeed be very brief, sometimes not exceeding a few hours, but in my experience it has more frequently been several days, though very rarely protracted beyond a week. One reason why laryngeal diphtheria often appears to commence suddenly, is the fact, to which I have already adverted, that the early symptoms of cases which ultimately become dangerous are often of the mildest character, and consequently sometimes altogether escape the observation of friends or attendants until the symptoms of actual croup give the alarm. Last autumn I saw, at the request of her medical attendant, a little girl, aged four years, whose indisposition had been so entirely overlooked by her parents, that they had brought her up from the country only a few hours before I saw her, and until the dyspnoea and stridulous breathing suddenly came on, and induced them to send for medical advice, were purposing to take her on to Gloucestershire. Yet not only

were the tonsils enlarged, with a patch of exudation, the size of a sixpenny-piece, on each, but the fauces were generally injected, and the glands at the angles of the lower jaw swollen: showing, beyond doubt, that the disease must have been progressing for some days, even if we had not ascertained on inquiry that the child had had slight sore-throat for nearly a week, which had not, however, prevented her from taking her food, and going about as usual. In fact, in that case, as well as in the case we are considering, it was evident to me, when first called on for an opinion, that the disease had already reached a stage in which, unless speedily relieved, the patient could not survive many hours, and in which the only possible modes of relief were either by means of the spontaneous expulsion of the false membrane, which I felt assured was choking up the larynx or trachea, or else by means of the artificial admission of air to the lungs through an opening in the trachea. Now and then, though very rarely, I have known cases of this kind recover, when apparently desperate, in consequence of the spontaneous separation and expulsion of a mass of false membrane, bearing a more or less close resemblance in shape to some portion of the air-passages. I had, some time since, in my possession two such portions of false membrane, one of which formed an exact cast of the lower part of the trachea and the first portion of the bronchi, and the other an accurate cast of the larynx and upper part of the trachea. Both had been expelled by patients who were apparently almost moribund, and in both cases the expulsion was followed by recovery. I also, some years ago, found in the *post mortem* examination of a little girl, whom I had seen once a few hours before death, a deposit of false membrane lining the whole of the larynx, and extending nearly an inch downwards into the trachea. This false membrane formed a complete tubular cast of the parts, but was almost entirely loose, being only attached at a few points to the mucous membrane which it overlaid. Thick and dense in the larynx, it became gradually thinner in the trachea, until it terminated in an extremely thin, soft, and scarcely coherent pellicle. The child had died very suddenly a few hours after I had seen it, and the immediate cause of death appeared to have been the partial detachment of the false membrane lining the larynx, which had choked the passage, and barred the admission of air. I was much mortified to find, after death, that possibly the operation of tracheotomy might have saved the child's life, and that the false membrane, being loose, might not improbably have been seized with a pair of forceps, and drawn through the wound.

I should add, however, that the spontaneous detachment and expulsion of the membraniform exudation, whether entire or in flakes, by no means ensures the patient's recovery. The temporary relief is indeed, for the most part, very remarkable, and encourages the hope that the patient—who, although only a short time before apparently in the last struggle for life, may now be sleeping calmly—is on the road to perfect convalescence; and in some instances this may really be the case. But such hopes are often too illusory, for the same tendency to repeat renewal of the false membrane by fresh exudation, which is frequently seen in diphtheritic affections of the fauces, exists also in the larynx: and, unless the local inflammation itself be upon the wane, it is too frequently found, a few hours after the expulsion of the former cast, that a new one occupies its place, and that the patient is in a worse state than before, being less able to cope with the fresh attacks of dyspnoea, and less likely to have strength to expel the obstruction. In fact, as long as the inflamed mucous membrane continues to pour out the liquid exudation which coagulates into the diphtheritic deposit, so long must the process of formation go on. It is by the persistence of this process that what was of a mere semi-transparent pellicle on the fauces becomes, in the space of a few hours, a dense membrane, and that the latter often increases in thickness from day to day, notwithstanding the waste going on at its free surface. And so, therefore, I regard it as probable, seeing the great rapidity with which the membrane reforms upon the fauces when it has been artificially detached, that, unless the inflammatory affection be really on the decline, the process of exudation and coagulation may go on for a time even more rapidly after the expulsion of the false membrane from the larynx than whilst it still covered the diseased surface.

To return, however, to the case of our little hospital patient. I was convinced, as already said, that the only possible chances for her life lay either in the almost immediate expulsion of the false membrane, or in the speedy performance of tracheotomy. The former is, as I have explained, an event of rare occurrence, never to be counted on in any particular case, and the issue of which is exceedingly uncertain when it does happen; the latter alternative of operation has very frequently failed in such cases, and seemed especially likely to do so in a case in which the left lung was already partially consolidated, and the bronchial membrane probably inflamed. Nevertheless, considering that the child's sufferings were urgent, that its death, in a few hours, seemed inevitable unless relief could be given by the operation,

and that there were no severe constitutional symptoms to contra-indicate tracheotomy, I spoke very decidedly in favor of its being performed. The event proved that in the circumstances the operation was not only justifiable, but right, for it was scarcely over when the child's breathing became comparatively tranquil, and she fell into a quiet sleep almost as soon as laid down in bed; and although it is true that in this case, as in too many others, life was not saved, it was certainly prolonged, the most urgent suffering was permanently relieved, and death came in a gentler and less distressing form than it would otherwise have done.

The immediate causes of death in this case were, doubtless, the collapse of lung, and the plugging up of the trachea and primary bronchi with tenacious mucus, which the child was unable to get rid of by expectoration; for the lung-tissue, although collapsed, was not inflamed, and the bronchitis was scarcely in itself severe enough to have proved dangerous, except as a complication of the graver disease. In fact, however, I regard both the bronchitis and the collapse of the lung as having resulted from the laryngeal affection; the former having probably been mainly occasioned by the gravitation downwards of the acrid fluids from the larynx and trachea consequent upon the patient's inability to expectorate. The collapse of lung doubtless arose, as it so often does in the bronchitis of children, from the imperfect admission of air into the lungs during inspiration, partly in consequence of the obstruction in the larynx and trachea, partly from the choking of the bronchial tubes with tenacious mucus. This latter again, was in a great measure owing to the inability to cough it up, consequent on the want of power to take such a full inspiration as necessarily precedes the act of coughing. This was therefore eminently a case of diphtheria, fatal in consequence of the local manifestations of the disease, and it was in the conviction that these constituted the real danger of the case, that I entertained no doubt respecting the propriety of endeavoring to save the patient by tracheotomy.

MEDICAL SOCIETIES IN CANADA.—Our neighbors in Canada are active in establishing medical societies. Two have recently been formed,—the "Medico-Chirurgical Society of Montreal," and the "Quebec Medical Society." Dr. George W. Campbell is President of the former, Dr. F. A. H. Lame of the latter.—

Medical & Surgical Reporter.

ON THE ANTAGONISM OF ATROPIA AND MORPHIA,
FOUNDED UPON OBSERVATIONS AND EXPERI-
MENTS MADE AT THE U.S.A. HOSPITAL FOR
INJURIES AND DISEASES OF THE NERVOUS
SYSTEM.

By S. WEIR MITCHELL, M.D., WM. W. KEEN, M.D., and GEO. R.
MOREHOUSE, M.D.

During our connection with the U.S.A. Hospital for Injuries and Diseases of the Nervous System, we have been obliged to resort to every possible expedient for soothing the pain of those terrible cases of neuralgia, which, in some shape, are apt to follow as a consequence of neural injuries. Among these means, incessant use has been made of hypodermic injections, which alone, in many instances, seemed able to overcome the anguish of certain forms of neuralgic distress. To what extent we have employed this mode of relief may be gathered from the fact that, at certain periods of our service, the resident surgeons made every day from twenty to thirty subcutaneous injections. In one case, half a grain to a grain of morphia was injected thrice a day, and the man finally recovered, after having used nearly four hundred injections.

We were naturally led to examine with care into the pretensions of the several agents which have credit for their power to lessen or destroy the sense of pain. The results of this inquiry were of the more value, because they were confined to the use of these agents by injections only, and because they were studied by more than a single observer. Our investigation brought us finally to consider the therapeutic relations of atropia and morphia, to which subject the greater bulk of this paper will be devoted.

The information which our note-books give in regard to the comparative value of remedies used to allay pain, is the result of an almost unexampled experience, and we shall not hesitate briefly to relate it before passing on to our main topic.

After repeated trials of conia, atropia, and datura, with the intention of relieving pain by their subdermal use, we ceased to resort to them. On the other hand, the employment of morphia, or of some preparation of opium for subcutaneous use, became a part of the every-day routine of practice.

Like others, we have met with certain inconveniences attendant upon this mode of employing morphia. In rare cases it always caused distressing sick stomach, but as the pain for

which we used it was oftentimes agonizing, the patient usually preferred to endure the sick stomach rather than fail of the delightful relief he obtained from the injection. In these instances it was commonly observed that the morphia ceased after a time to produce either nausea or emesis.

The local annoyances resulting from injections so long continued and so numerous, were sometimes very embarrassing, for though in some men they could be used in the same limb week after week, in others the numerous punctures produced a very unpleasant increase of sensitiveness in the part. Such an instance may be found on page 151, Case 31, of our treatise on wounds and other injuries of the nerves. In other persons, the injections gave rise to occasional abscesses, and in a soldier who was at one and the same time the subject of a very painful wound of the arm, and of a cold abscess on the back, every injection gave rise to a large indolent abscess. One instance of erysipelas following the use of an injection was seen by us. (*Op. cit.* p. 150.)

As the opinion of many good observers is quite decided as to the fact that the injection gives the same relief, whether made near to or remote from the seat of pain, we may with reason be asked, why we used so many injections in the same limb or neighborhood. The answer lies in the fact that our patients very early, and we, ourselves, later and more reluctantly, reached the conclusion that the point at which the injection was to be employed was not a matter of indifference. In the milder instances of neuralgia, a subdermal injection of morphia used anywhere in the body did give relief, but in cases of "burning neuralgia," such as we have described in our book on nerve wounds, p. 100, *et seq.*, the nearer we could bring the agent to the place where the pain was felt, the greater was the ease obtained. We are the more anxious to insist upon this matter, because we neglected to make the same comment when detailing our mode of treating these lesions in the volume above mentioned. The belief thus reached, is certainly not altogether unphysiological, as we very well know that morphia is capable of causing a local paralysis of sensory nerves, with which it may come in contact. * * * * *

If we be correct in the views expressed in the foregoing pages, certain practical lessons of some value may be learned from them.

If atropia lessens or destroys the unpleasant influence of morphia on the cerebrum, but does not alter its power to allay pain, there seems no reason why we should not use them together so

as to obtain all that is best from the morphia with the least amount of after discomfort.

We have certainly had good results from such a use of both drugs, in the form of suppositories, in cases of disease of the bladder or generative organs.

Again, it is sometimes desirable to use either drug in very full doses. This we may do quite fearlessly, when assured of our ability to restrain its action by a full exhibition of its opponent.

The foregoing experiments and observations authorize us, we think, to draw the following conclusions as to the use of hypodermic injections, and as to the antagonism of atropia and morphia:—

1. Conia, atropia, and daturia have no power to lessen pain when used subdermally.

2. Morphia thus used is of the utmost value to relieve pain, and is most potent, in certain forms of neuralgia, the nearer it is applied to the seat of the suffering.

3. Morphia lowers the pulse slightly, or not at all; atropia usually lowers the pulse a few beats within ten minutes, and then raises it twenty or fifty beats within an hour. The pulse finally falls about the tenth hour below the normal number, and regains its healthy rate within twenty-four hours.

4. Morphia has no power to prevent atropia from thus influencing the pulse, so that, as regards the circulation, they do not counteract one another.

5. During the change of the pulse under atropia, the number of respirations is hardly altered at all.

6. As regards the eye, the two agents in question are mutually antagonistic, but atropia continues to act for a much longer time than morphia.

7. The cerebral symptoms caused by either drug are, to a great extent, capable of being overcome by the other, but owing to the different rates at which they move to affect the system, it is not easy to obtain a perfect balance of effects, and this is made the more difficult from the fact, already mentioned that atropia has the greater duration of toxic activity.

8. The dry mouth of atropia is not made less by the coincident or precedent use of morphia. Atropia does not constipate, and may even relax the bowels; morphia has a reverse tendency.

9. The nausea of morphia is not antagonized or prevented by atropia.

10. Both agents cause dysuria in certain cases, nor is the dysuria occasioned by the one agent relieved by the other.

11. Atropia has no ability to alter or lessen the energy with which morphia acts to diminish sensibility or relieve the pain of neuralgic disease.

12. As regards toxic effects upon the cerebral organs, the two agents are mutually antidotal, but this antagonism does not prevail throughout the whole range of their influence, so that, in some respects, they do not counteract one another, while, as concerns one organ, the bladder, both seem to affect it in a similar way.—*Amer. Jour. of the Med. Sciences, and Boston Med. and Surg. Jour.*

Book Notices.

THE PRACTICE OF MEDICINE AND SURGERY APPLIED TO THE DISEASES AND ACCIDENTS INCIDENT TO WOMEN. By WM. H. BYFORD, A.M., M.D., author of "A Treatise on the Chronic Inflammations and Displacements of the Unimpregnated Uterus," and Professor of Obstetrics and Diseases of Women and Children, in the Chicago Medical College. Philadelphia: LINDSAY & BLAKISTON. 1865.

This is an elegantly executed volume, of 556 pages, done up in the best style of the publishers. The type, paper, and binding are all excellent.

The work embraces thirty chapters, devoted to the consideration of the following topics, namely:—Diseases and Accidents of the Labia and Perineum; Diseases of the Vulva; Vaginitis; Menstruation and its Disorders; Menorrhagia; Dysmenorrhœa; Misplaced Menstruation; Acute Inflammation of the Unimpregnated Uterus; Chronic Inflammation of the Uterus and Cervix; Complications of Inflammation of the Cervix; General and Local Treatment; Treatment of Sub-mucous Inflammation; Perimetritis; Displacements, their Philosophy and Treatment; Diseased Deviations of Involution of the Uterus; Cancer of the Uterus; Tumors of the Uterus; Ovarian Tumors; Diseases of the Mammæ; Phlegmasia Alba Dolens, or Crural Phlebitis; Puerperal Fever; Stomatitis Materni, or Nursing Sore Mouth. The author is an experienced writer, an able teacher in his department, and has embodied in the present work the results

of a wide field of practical observation. We have not had time to read its pages critically, but freely commend it to all our readers, as one of the most valuable practical works issued from the American press.

For sale by S. C. GRIGGS & Co., Chicago. Price \$5.

THE STUDENT'S BOOK OF CUTANEOUS MEDICINE AND DISEASES OF THE SKIN.
By ERASMUS WILSON, F.R.S. New York: WILLIAM WOOD & Co., 61 Walker Street. 1865.

This is a good-sized volume, of 445 pages; good type, fair paper and binding. It is, in fact, an abridgment or condensation of Wilson's well-known voluminous work on cutaneous diseases. The first chapter is devoted to a consideration of the anatomy and physiology of the skin; and the second to its pathology, and the classification of its diseases. The remaining twenty-two chapters are devoted to the detailed description and treatment of the different varieties of cutaneous disease.

Though we do not like the author's manner of grouping or classifying the diseases of the skin, in all respects, yet the work is a plain practical treatise, admirably adapted to the wants of medical students. It is sufficiently full, yet not too voluminous, for a good text-book. We fully endorse the closing paragraph of the author's preface. He says:—"Our aim has been to simplify, to endeavor to restore to general medicine, a department of much interest and importance, and, by furnishing the student with a clear view of these diseases, to remove them from the narrow sphere of Specialism to the wider and nobler field of Catholic Medicine."

For sale by W. B. KEEN & Co., Lake Street, Chicago.

LECTURES ON THE DISEASES OF THE STOMACH, WITH AN INTRODUCTION ON ITS ANATOMY AND PHYSIOLOGY. By WILLIAMS BRINTON, M.D., F.R.S., Physician to St. Thomas' Hospital. From the second English edition. Philadelphia: LEA & BLANCHARD. 1865.

This is a full-sized octavo volume of 302 pages; embracing eight lectures, besides the preliminary chapter on the Anatomy and Physiology of the Stomach. The first chapter relates to the Symptoms of Gastric Diseases generally; the second, to the Morbid Anatomy, or *Post Mortem* Appearances; the third, to

Ulcer of the Stomach; the fourth, to Cancer; the fifth, to Cirrhotic Inflammation, or Plastic Linitis of the Stomach; the sixth, to Dyspepsia; the seventh, to Gastric Phthisis; and the eighth, to Gout in the Stomach. The work is a valuable addition to our medical literature.

For sale by W. B. KEEN & Co., Lake Street, Chicago.

The following works have been received, and will be more fully noticed hereafter.

THE USE OF THE LARYNGOSCOPE IN DISEASES OF THE THROAT, &c. By MORRILL MACKENZIE, M.D., London, M.R.C.P. Philadelphia: LINDSAY & BLAKISTON. 1865.

RESEARCHES ON THE MEDICAL PROPERTIES AND APPLICATIONS OF PROTOXIDE OF NITROGEN, OR LAUGHING GAS. By GEO. J. ZIEGLER, M.D., &c. Philadelphia: LIPPINCOTT & Co. 1865.

LECTURES ON INFLAMMATION, BEFORE THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. By JOHN H. PACKARD, M.D., &c. Philadelphia: J. B. LIPPINCOTT & Co. 1865.

LECTURES ON FEVER, &c. By A. P. MERRILL, M.D., &c. New York: HARPER & BROTHERS, Publishers. 1865.

PHYSICIAN'S VISITING LIST, DIARY, AND BOOK OF ENGAGEMENTS, FOR 1866. Philadelphia: LINDSAY & BLAKISTON. 1865.

For sale by W. B. KEEN & Co., Lake Street, Chicago.

Editorial.

DUODENO-HEPATITIS, OR ACUTE JAUNDICE. THE SUBSTANCE OF A CLINICAL LECTURE IN THE MERCY HOSPITAL, OCTOBER 23D, 1865.

By N. S. DAVIS, M.D., Prof. Clin. Med., &c., Chicago, Ill.

GENTLEMEN:—The patient before you is a man, aged about 26 years, who was admitted to the hospital three days since. He had been sick two weeks previously. You see, at a glance, that his whole cutaneous surface is of a deep yellow color; the conjunctiva is as yellow as though painted with gamboge. The

skin over the epigastrium is not only deeply yellow, but presents numerous small red spots, like minute spots of extravasated blood. The extremities are cool; the expression of countenance dull; lips dry; tongue moderately coated with a brownish fur; pulse small, weak, and 110 per minute; stomach so irritable as to reject, by vomiting, most of the nourishment or drink given to the patient; bowels quiet, but not constipated; urine scanty and of a very dark, reddish-brown color. Patient complains of great weakness and weariness, with a sense of oppression at the epigastrium. Though the universal distribution of the coloring matter of bile, so visible in the whole exterior of the patient, indicates some disease or obstruction connected with the liver, yet you perceive that a close physical exploration, by palpation and percussion, affords no evidence of enlargement of that organ; but we find decided tenderness to percussion or firm pressure over that part of the epigastrium corresponding with the position of the duodenum and hepatic ducts.

What is the nature of the disease under which this patient is suffering? Many of you will be prompt to answer, in popular language, that it is a plain case of jaundice. But jaundice simply means yellow, and is, like dropsy, a mere symptom. The term gives us no information in relation to the pathology of the case. The jaundice, or yellow color, is merely a symptom, indicating the retention of the coloring matter of bile, and its deposit in the various structures of the body. It does not, with certainty, indicate any form of hepatic disease; much less that the secretory function of the liver is torpid or inactive. On the contrary, the abundant diffusion of bile throughout the system, not only coloring the tissues, but passing off freely in the urine, perspiration, &c., shows that the secreting cells of the liver so far perform their office as to cause the elements of bile to unite and form an abundance of that fluid, but it does not pass off through its natural channel, the hepatic duct. Hence, while the conjunctiva, skin, urine, &c., are all highly colored, the feces are clay-colored, or whiter than natural. This failure of the bile to pass off through the hepatic ducts

may arise from three widely different pathological conditions. It may be caused by such an alteration in the sensibility or properties of the capillary extremities of the hepatic ducts as will prevent them from taking up the bile as it is secreted in the lobules of the liver, leaving that office to be performed by the venous capillaries through which the bile passes back into the blood, instead of through the ducts to the duodenum. The second condition is that of simple mechanical obstruction of the larger hepatic ducts. The most common cause of this, is the formation of biliary calculi. The obstruction from this cause may be only temporary, as when a calculus is delayed in its passage, creating great pain, sympathetic gastric irritation, and general depression, ending suddenly when the calculus finally passes from the duct into the duodenum. Or it may be permanent, as when similar calculi accumulate in the gall-bladder and remain there for years. But the third, and most common cause of jaundice, is a subacute inflammation of the mucous membrane lining the duodenum and the *ductus communis coledochus*.

You are aware that the two constant or essential elements of inflammation are, morbid excitability of the diseased structure, and accumulation of blood in its capillaries; and the most constant accompanying effect is increased bulk or tumefaction. If you remember that the *ductus communis* is scarcely larger than a crow's quill, and that it opens into the intestines obliquely, you will readily perceive that a very moderate tumefaction of the mucous membrane, lining that part of the duodenum where the duct opens, would be sufficient to obstruct the opening and render the passage of bile very slow, or stop it altogether. And if the inflammation causing the tumefaction should extend to the lining membrane of the duct also, you readily perceive how it would almost necessarily render the obstruction complete while such inflammation should continue. It is to this last class of cases that the patient before you belongs. It is, indeed, a very strongly marked representative of the class.

Let us examine a little more closely the essential phenomena or symptoms of this case. If you note the sounds carefully, as I percuss, you will readily detect the line where pulmonary

resonance ends and hepatic dulness begins, and, as I move downwards, you will distinguish, still more plainly, where the latter dulness ends and the intestinal resonance begins. You are thus enabled to measure the exact vertical depth of the liver. If we extend the percussion to the left, over the epigastric region, we again find the hepatic dulness ceasing before we reach the centre of the latter region, thus determining the limits of the left lobe. By this examination, you learn that the liver, in this case, occupies no more than its natural space. And you also learn another thing of great importance, namely, the exact location and extent of tenderness. While percussion was going on over the right hypochondriac region, occupied by the liver, you perceived no indications of pain or soreness manifested by the patient; but so soon as the act extended to the right margin of the epigastric region, the patient began to give signs of suffering. In this patient there is decided tenderness over the whole epigastric region, but more acute at the right lower margin of that region, which is directly over the point where the biliary duct enters the duodenum. You will find some tenderness in that locality in almost every case of this variety of disease. There is also a sense of heaviness, or oppression, that is annoying to the patient, and is generally increased, with some feeling of nausea, from half to three-quarters of an hour after taking food. In the patient before you, this feeling of oppression and disposition to vomit is more strongly manifested than is usual in the class of cases to which it belongs. All the important symptoms point to the duodenum and common hepatic duct, as the principal seat of the disease; and they equally point to a mild grade of inflammation, as the form of disease existing. The disturbed condition of the digestion, especially the latter stages of it, with frequent nausea, sense of heaviness, and tenderness in the right and lower part of the epigastrium, clearly indicate both the seat and the inflammatory nature of the disease. As this inflammation is usually of a mild grade, it seldom causes the death of the patient, and consequently the opportunities for *post mortem* examinations have been few.

The disease occurs most frequently in the Autumn, during the first cold and wet weather. In this city, we meet with cases every year, during the months of October and November; and sometimes the cases are so numerous as to well-nigh merit the title of epidemic. About ten years since, during the Autumn, the disease was so prevalent in this city, that more than sixty cases came under my care within thirty days. A few of the cases in that season assumed an unusual degree of severity. The only fatal case that occurred directly in my own practice, was that of a female six months advanced in pregnancy. The disease commenced with the usual symptoms, and after the system had become thoroughly impregnated with bile, the secretions and whole cutaneous surface deeply yellow, the gastric irritability became so great that nothing was retained on the stomach, the urinary secretion diminished, day by day, until it was entirely suppressed; the surface assumed a darker, more bronzed hue; the mental dulness increased, until it became coma; and in that state uterine contractions commenced, expelling the foetus and placenta, followed by the loss of only a few ounces of blood, and without the slightest apparent consciousness of the patient. A few hours after this, the acts of vomiting became more like an involuntary regurgitation of a large quantity of a dark coffee-ground fluid, closely resembling the black-vomit of yellow fever. The patient died in a few hours. No *post mortem* examination was allowed in that case; but during the same season, a fatal case occurred in the practice of a neighboring physician, which was uncomplicated with pregnancy, and in which a *post mortem* examination was allowed. No important local lesions were found, except in the mucous membrane of the duodenum, hepatic ducts, and central portion of the liver. The mucous membrane of the duodenum was intensely red throughout its whole extent, except some spots where it had assumed a dark hue. It was thickened or tumefied, and, in the darker colored places, softened. The membrane lining the hepatic ducts from the orifice in the duodenum to the smaller branches in the liver, were in the same pathological condition. The gall-bladder was moderately distended with

healthy-looking bile, and its interior surface appeared to be free from inflammation. No biliary calculi were found. The liver appeared to be very slightly enlarged, color natural over the convex surface, but paler than natural over a part of the under or concave surface, especially around the entrance of the vessels and ducts. This alteration of color extended into a portion of the interior structure, which seemed to be softened and moderately infiltrated with fat globules.

You will see that the results of this examination fully confirm the opinion, already expressed, as to the seat and inflammatory nature of the disease under which our present patient is laboring. If the patient is thus laboring under an inflammation of the mucous membrane of the duodenum and hepatic ducts, causing sufficient tumefaction to obstruct the free flow of bile, thereby inducing the jaundiced color; the oppression and tenderness in the epigastrium; the imperfect digestion, with frequent sense of nausea, and sometimes vomiting, what are the rational indications for treatment?

The patient feeling oppressed and sick in the epigastric region, and his friends seeing his eyes begin to look yellow, very naturally concludes that he is bilious, which term is used to express some vague idea of the retention of bile on the stomach, and, consequently, hastens to swallow a dose of active physic, or an emetic, or both, for the purpose of carrying it off. And we have occasionally met with physicians who had prescribed the same remedial agents, and followed their operation by other remedies directly calculated to act on the liver, to increase the secretion of bile.

After what has been said of the nature of this disease, and the fact that the bile does not exist in the stomach in any quantity, I need not say that such harsh evacuants as emetics and cathartics, especially in the early stage, are worse than useless. They not only fail to afford any of the relief that the patient expected, but they frequently so increase the irritation of the mucous membranes as to cause a persistent disposition to vomit, and sometimes diarrhoea. And to give remedies directly calculated to increase the secretion of bile before the obstruction

had been removed from the ducts, would be as absurd as to give diuretics while the bladder was retained full of urine, by a stricture of the urethra.

The plain indications in this, and all similar cases, is to allay the irritation of the mucous membrane and diminish its vascularity, thereby removing the tumefaction, and, consequently, the obstruction of the ducts. It is desirable also to promote, as far as possible, the action of the skin and kidneys, that the excrementitious matters of the system may be more fully eliminated. These objects can usually be accomplished by very simple remedial measures. I usually commence the treatment of such cases by giving one of the following powders every four hours, until six have been taken:—

Ry.	Hydrarg. Chlorid. Mite, -----	10 grs.
	Pulv. Doveri, -----	30 grs.
	Nit. Potassa, -----	30 grs.

Mix, divide into six powders.

When these are all taken, if the bowels do not move spontaneously, a mild laxative should be given, after which the Dover's powder and nitrate of potassa may be resumed, and continued, with an occasional mild laxative, until the recovery is completed. In the milder class of cases, this will be all the treatment required. But if, as in this case, the stomach is so irritable as to induce frequent vomiting, the Dover's powder and nitrate potassa may be replaced by sulphate of morphia, one-quarter of a grain, and bi-carbonate of soda, 5 grains, in each powder, with leeches or counter-irritation over the epigastrium. If the urine has become very scanty, a teaspoonful of nitrous ether may be given between the powders. The nourishment should be bland and simple throughout the treatment; and, after the intestinal evacuations have become dark, green, or yellow, showing that the bile is passing freely through the ducts, if there is much debility, with impaired appetite, as is often the case, the mineral acids, especially the nitro-muriatic, may be given with much advantage. Sometimes there will be left a constant tendency to constipation. If so, one of the following pills may be given every night, or every night and morning, with benefit:—

R.	Ext. Hyoseyamus, -----	30 grs.
	Ext. Taraxacum, -----	30 grs.
	Sulph. Ferri, -----	30 grs.
	Pulv. Aloes, -----	15 grs.
	Ext. Nux Vom., -----	15 grs.

Mix, and divide into 30 pills.

Such is the course of treatment which has been commenced, and will be carried out in the case before you, the progress and results of which will be observed by you at subsequent clinics.

PRACTICAL PHARMACY.

At the late meeting of the American Pharmaceutical Association, held in Boston, Dr. SQUIBB read a very interesting paper on Fluid Extracts which, if adopted by the Committee on Revision, will introduce a radical change in the above class of preparations. In the last edition of the Pharmacopeia, the following plan was adopted as a basis for making nearly all the fluid extracts:—Sixteen ounces of a drug is directed to be percolated with from three to five pints of dilute alcohol, reserving and setting aside the first twelve ounces which pass through, the remainder is to be evaporated down to four fluid ounces, and the two solutions mixed together, making one pint of fluid extract. This certainly is a very excellent process, but unfortunately the high duty placed on alcohol rendered it impossible for the retail druggists to make these fluid extracts without sustaining a heavy loss, and in consequence, this branch of practical pharmacy fell into the hands of a few who manufactured them on a large scale, and were able to use suitable apparatus for collecting the alcohol again.

The following is a synopsis of Dr. SQUIBB's paper, taken from the *Chemist's & Druggist's Circular*, for October:—Sixteen ounces of a drug, as for instance colchicum, is to be percolated with alcohol of suitable strength, adding one pint, and as soon as the alcohol disappears from the top, water is poured on till fourteen fluid ounces of percolate is obtained, this constitutes the fluid extract, there is to be no evaporation and no excess of alcohol added, and the fluid extract is a strong and a great

deal cheaper than if a gallon had been passed through it and evaporated down to a pint. Dr. SQUIBB also finds that fluid extracts, prepared either by this process or by that of the Pharmacopœia, are relatively stronger than the drugs from which prepared, while they are perhaps twice as strong as the majority of those sold by the leading manufacturers. The advantages of the above process, are:—First, it will entirely do away with both fluid extracts and the ordinary tinctures, replacing them with an article which can be made by any druggist, and will really represent a pint for a pound. Again, in consequence of no heat being used in the process, all the essential and volatile principles are retained unchanged; they can also be made for one-half the price of the present fluid extracts. These are very considerable advantages, and will certainly compensate for any confusions caused in adopting this new process.

Anticipating the decision of the Pharmaceutical Committee. I shall keep on hand a complete assortment of these concentrated tinctures for dispensing.

S. W. GILLESPIE,

Laboratory, Cor. Monroe and State Streets.

Chicago, Oct. 28, 1865.

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